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TORTURE AND THE DARK SIDE

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DON'T GET**

CANCER

And Scientists Think
They Know Why

Newsweek

FEATURES

WHY ELEPHANTS DON'T GET CANCER— AND WHAT THAT MEANS FOR HUMANS

Some species get cancer all the time; others, rarely at all. A young researcher in Salt Lake City is trying to figure out why.



*A FORMER CIA INTERROGATOR
ON DEATH, TORTURE AND
THE DARK SIDE*

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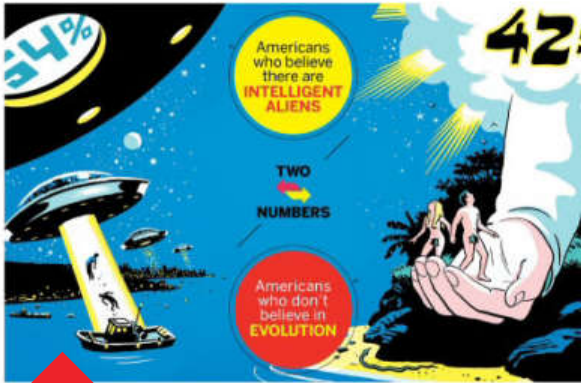
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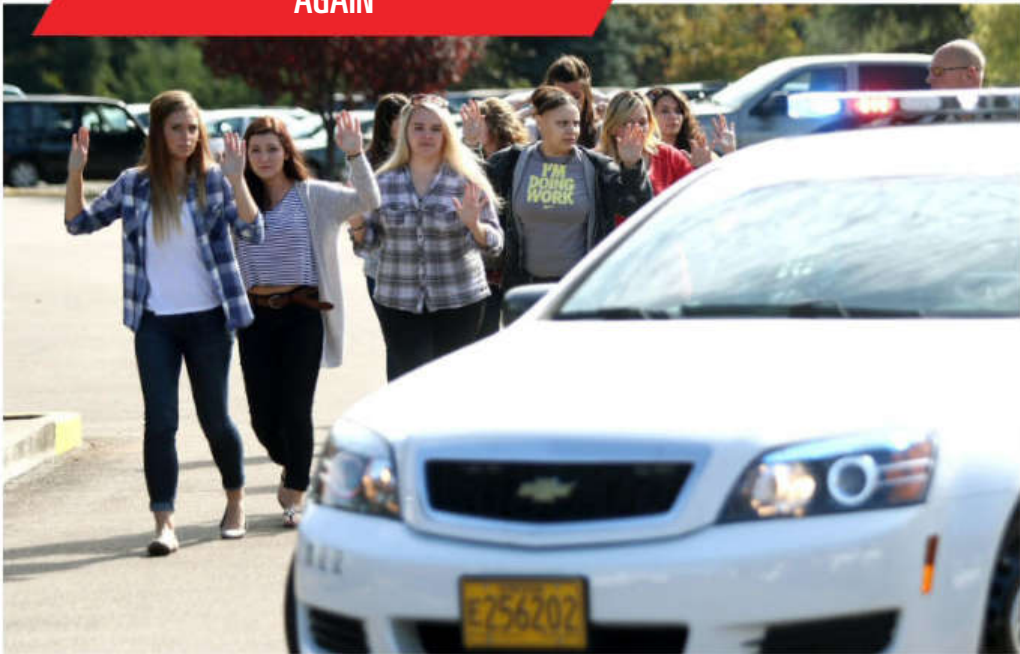
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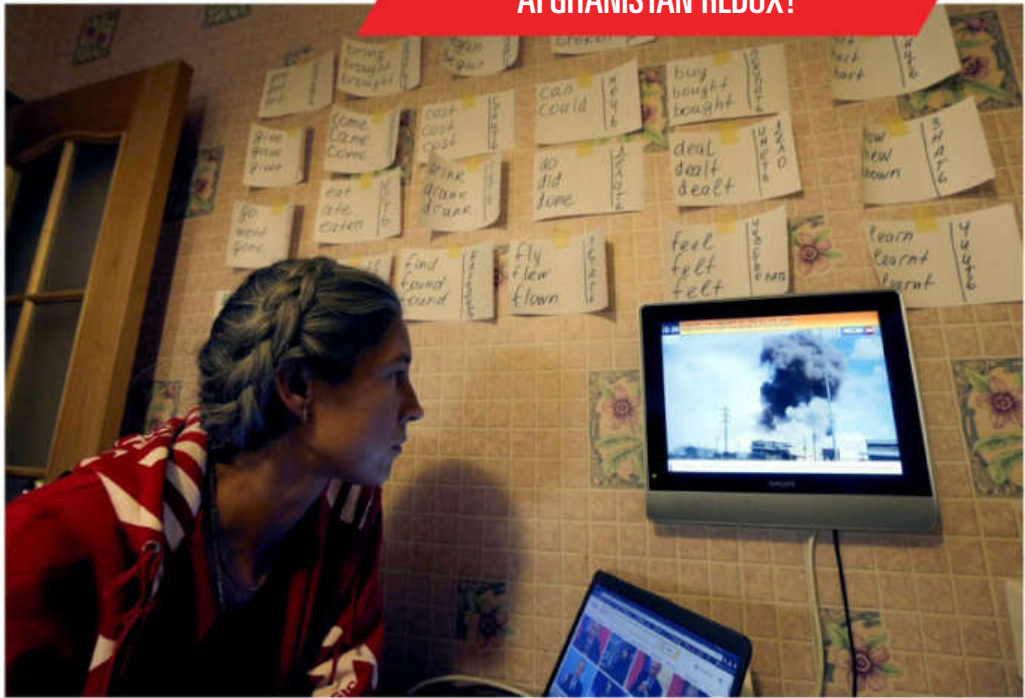
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WHY ELEPHANTS DON'T GET CANCER—AND WHAT THAT MEANS FOR HUMANS

**SOME SPECIES GET CANCER ALL THE TIME; OTHERS,
RARELY AT ALL. A YOUNG RESEARCHER IN SALT LAKE
CITY IS TRYING TO FIGURE OUT WHY.**

Every police officer knows he might have to save his partner's life. Few will have to do so in the manner of Nick

Belliveau, a 28-year-old cop in the small northern California town of Sebastopol.

Belliveau works with a German shepherd named Frank, an energetic 7-year-old who does what Belliveau calls “find-and-bite kind of work.” Nestled in the gentle hills of wine country, Sebastopol is generally a calm place, but it has its cast of small-time crooks. Once, in February 2014, about an hour before midnight, Belliveau encountered one of these when he tried to accost a belligerent drunk in an alley behind a bar. The drunk, swinging a bottle, proved difficult to subdue, so Belliveau pressed a button that released Frank from the squad car. The German shepherd sprinted toward the two men and promptly clamped down on the suspect’s hand, breaking it. That quickly ended the struggle.

Got questions about how researchers are studying cancer in animals and what that means for humans? Ask the two experts in our story on Twitter using the hashtag [#CancerQs](#).

Though Frank is a weapon, he is also a pet who comes home with Belliveau at the end of each shift. Last winter, Belliveau’s wife was running her hands through Frank’s thick mane when she noticed a “big old lump under his neck.” This could mean many things, none of them auspicious. Belliveau took Frank to a veterinarian, who ran some tests and placed him on antibiotics.



A dog is treated for cancer at the Eiffelvet veterinary clinic on September 22, 2014 in Paris. Since pet dogs are exposed to the same environments as their owners are, says researcher Breen, they are “the ultimate canary in the coal mine” for oncologists. Credit: Lionel Bonaventure/AFP/Getty

The antibiotics did not help. Belliveau was working a graveyard shift several days later when his wife called. Frank was lethargic, eating nothing, cowering in a corner of the garage. This was uncharacteristic behavior for a dog who otherwise brims with energy; when Belliveau makes a traffic stop and leaves Frank back in the car, the barking is incessant. This was not a meek dog. Something was amiss.

Belliveau rushed home and took Frank back to the vet. This time, the German shepherd was diagnosed with lymphoma, a cancer of white blood cells whose telltale sign is enlarged lymph nodes. Belliveau now faced several options, including doing nothing. But if he did nothing, Frank would die, quickly. The most promising course of treatment involved 19 weeks of chemotherapy. This would cost \$10,000, more than three times what Frank had cost the Sebastopol Police Department.

Related: The High Cost of Cancer Care: Your Money or Your Life?

“I didn’t really think twice about it,” Belliveau told me as we rode around in his patrol car through the crisp Northern California night. Frank had once saved him; now it was his turn to save Frank. The Sebastopol Police Department told him it could defray some of the costs, but that departmental funds would probably not be able to cover the full cost of the chemotherapy. So Belliveau turned to the Internet.

When I met him in February, he told me he’d made about \$20,000 through the online appeal. This seemed to please and stun him. Many of the donors, Belliveau says, shared a common trait: They too had owned dogs who had suffered from cancer. Dogs are highly susceptible to cancer, with certain varieties of the disorder plaguing certain canine breeds. For example, the shaggy Bernese mountain dog is routinely felled by histiocytic sarcoma, while the puffy chow chow is one of several breeds prone to oral melanoma. Canines’ plight highlights the deep genetic roots of cancer: breeding dogs for certain traits, like a golden mane or elongated snout, inadvertently passes other, undesirable, genetic traits from generation to generation, with cancer effectively piggybacking on the good looks we associate with pure breeds. Similar forces work on humans too: For example, women of Ashkenazi background are at increased risk for breast cancer stemming from the BRCA genetic mutation.

But while some dog breeds routinely get cancers, others do not. In their book **Zoobiquity: The Astonishing Connection Between Human and Animal Health**, the evolutionary biologist and cardiologist Dr. Barbara J. Natterson-Horowitz and science journalist Kathryn Bowers note that beagles and dachshunds are relatively cancer-free. Natterson-Horowitz and Bowers write that “these extra-healthy dog breeds may point to behaviors or physiology

that offer cancer protection.” What those behaviors or mechanisms may be, we do not know.

Dogs probably also get cancer because they are, more than any other animal, exposed to the cornucopia of toxins that are the products and by-products of modern civilization. “They breathe the same air [we do]; they drink the same water,” explains Matthew Breen, who heads [a canine cancer research lab at the North Carolina State University](#). Formaldehyde in furniture, bisphenol-A in plastic dishware, polycyclic aromatic hydrocarbons in burned meat: Your poodle is about as exposed to these likely carcinogens as you are.

Lately, Breen has been trying to map canine cancer clusters across the United States. He explains that if an environmental pollutant—a toxin in the groundwater, say, or particulate matter in the air from a nearby factory—is present in a community, any resulting cancer would show up in dogs before showing up in humans. And since nearly half of American households have dogs, 80 million of them, Breen calls these beloved pets “the ultimate canary in the mine.”

Breen is one of an increasing number of researchers looking to animals for answers about cancer. “The failure to pursue this path is scientifically irresponsible,” says Natterson-Horowitz, the Zoobiquity co-author. “Every single minute of every single day, bird, fish, terrestrial mammals develop disease, and many of those diseases overlap with the diseases we have.” Doctor Dolittle, in other words, may have plenty to teach us about human illness.

And then there are the mammals who do not get cancer at all, the anti-Franks, those super-dachshunds. The ones Dr. Harold E. Varmus, the former head of the National Cancer Institute, [told The New York Times last spring he wants to know more about](#). The ones who have an innate armor

against the disease that afflicts some 1.7 million Americans each year.

Those are the ones that fascinate Dr. Joshua D. Schiffman.



Dr. Joshua Schiffman, an oncologist, had cancer when he was a teen, and after watching a pet dog die of cancer years later, committed his career to unraveling the mystery of elephants and the Big C. In his research he uses blood collected from elephants at the Hogle Zoo in Salt Lake City, Utah, to figure out what makes them resistant to cancer. Credit: Kim Raff for

Newsweek

Dr. Joshua D. Schiffman and Dr. Matthew Breen will be answering your questions about their cancer research on Twitter. Use the hashtag **#CancerQs** to join the conversation.

Schiffman knows all about cancer, of both the human and animal variety. He grew up in Providence, Rhode Island, the son of an oncologist who worked at the National Institutes of Health and at Yale before taking a position at

Brown that he holds to this day. His father was a clinician, not a researcher. On the map of the human body, he knew exactly what cancer would look like, where it sprouted, where it went. His job was not to find out where the cancer came from, or why it came, but to simply make it go away so that his patients could live another day, and then another day after that.

Schiffman told me about one day in the early summer of 1989, when he was 15 years old. He came down from his room for dinner, and his father wrapped his hands tightly around Schiffman's neck. Schiffman thought he was being strangled by a parent not otherwise prone to violence, in which case he must have done something truly terrible. He hadn't: The older Schiffman was feeling the lymph nodes in his son's neck. Their enlargement, he well knew, was often a first sign of cancer. His fingers confirmed the first suspicion of his eyes. He did subsequent tests, which confirmed that Josh had Hodgkin lymphoma, a blood cancer that afflicts teenagers, a cancer similar to the one that paid a recent visit to Frank, the German shepherd.

What followed, Schiffman calls "a summer of R and R: rest and radiation." He was treated at a hospital in Boston. He and his father would drive there each day for the radiation therapy, then drive back to Providence. Schiffman says he would spend his evenings vomiting from the radiation, which touched on the area postrema of his brain, where the nausea response is triggered. Then, the next morning, they would do it all over again. It was a summer of curative brutality. Yet the cancer went away, and it has never come back.

Related: Programming Bacteria to Kill Cancer Cells

Today, Schiffman is 41 years old. He lives in Salt Lake City with his wife, Maureen, and their three children. After his bout with lymphoma, Schiffman wanted nothing more to do with medicine, especially the sort his father practiced.

He was done with doctors, and he was certainly done with cancer.

Except it hasn't worked out that way: Schiffman is the director of the pediatric cancer genetics clinic at Intermountain Primary Children's Medical Center and the Huntsman Cancer Institute at the University of Utah. He treats children who are sick in much the same way he was 26 years ago, frightened kids facing death. A lot of his time, though, is spent trying to unravel the genetic and hereditary workings of cancer, figuring out how we inherit cancer risk, much like the chow chows marked for melanoma from birth. His only complaint about Salt Lake City is that the bagels are inedible. One can't be much surprised about that.



Schiffman visits with Alex Hulka, a cancer patient participating in the oncologist's study, at Primary Children's Hospital in Salt Lake City, March 30. Credit: Kim Raff for Newsweek

As his teenage experience with cancer receded, Schiffman's aversion to medicine eased. For college, he decided to attend the Program in Liberal Medical Education at Brown University, an eight-year course of study that emphasizes a humanistic approach to medicine, with classes taught by poets and playwrights. In a decision that was either

improbable or inevitable, Schiffman became interested in pediatric cancer.

While at Brown, he started volunteering at a local hospital, where he met a patient named Derek Cute who had just turned 7. He had leukemia, and he was going to die from it soon. This was obvious to those who were treating him. Other volunteers warned Schiffman against becoming attached to Derek, but he didn't listen, perhaps recognizing something of himself in the ailing boy. He became increasingly close to Derek. Once, when Schiffman was visiting him at home, Derek said, "You know, Josh, you're my only friend." Derek died shortly thereafter; Schiffman was shattered.

Derek's death led Schiffman to a simple conclusion that continues to guide his work today: "Cancer sucks. And we have to do something about it." After graduating with a medical degree from Brown, Schiffman went on to Stanford University, where he became interested in pediatric palliative care, helping kids die if he could no longer heal them. In 2003, he and Maureen bought a house in Menlo Park, California, near the Stanford campus. Now that they had a house, they could also have a dog. They got a Bernese, Rhody, so named for the Schiffmans' home state of Rhode Island. Someone alerted Schiffman to the breed's susceptibility to histiocytic sarcoma, but he brushed the warning aside, thinking, What are the chances of an oncologist having a dog with cancer?

In 2008, Schiffman took a job with the University of Utah, where he could conduct genetic research while continuing his work in pediatric oncology. He was becoming increasingly interested in the fact that some children seem to be born with a predisposition to cancer, meaning that one or both parents had passed on some unlucky gene. Utah was the perfect place to conduct a study of cancer's path through families: Mormon families tend to be very large, and "genealogy is a big part of the culture," as Schiffman would

soon discover. He was also entranced by the landscape, the Wasatch Range rising like a brown crest above the city, the clarity of alpine sunlight. “There’s these big mountains, big spaces and openness to ideas,” he told me. “It kind of all goes together.”

The Schiffmans were settling into Salt Lake life when, in 2010, Rhody developed a limp. Schiffman remembered the warning about Bernese mountain dogs and sarcoma, how easily he had ignored what turned out to be a statement of deep-seated genetic risk. The warning had not been prescient but merely factual. Unlike Frank, the Sebastopol police dog, Rhody had little hope for treatment. “He was dead within a couple of months,” Schiffman says.

In the wake of Rhody’s death, Schiffman developed a new interest: finding out why his dog had gotten sick. Once a dog hits the age of 10, its chance of dying from cancer is a striking 50 percent. There were lessons here that Schiffman thought could be valuable to all people, not just dog lovers. Schiffman was “still healing” from Rhody’s death when he went to a conference on genetics in Washington, D.C. There, he saw a poster for a paper on the genetic risk of Bernese mountain dogs for cancer. He began, at once, to interrogate the poor graduate student presenting the research, explaining why he had to get in touch with the study’s authors (Schiffman’s approach to science can be described as accost-and-collaborate). Not only had his Bernese died of cancer, but he was studying genetic predisposition to cancer, albeit in humans. Like the love affairs in Meg Ryan–Tom Hanks movies, this was meant to be.



Schiffman visits with J.T. Bird, left, and his mother Branda Carlson as Bird receives chemotherapy treatments at Primary Children's Hospital in Salt Lake City, March 30. Credit: Kim Raff for Newsweek

One of the main authors on the paper was Breen, the N.C. State canine cancer researcher who was widely regarded as a leader in that field. They quickly developed a productive friendship; “I was the human to his dog,” Schiffman says, “and he was the dog to my human.” Though working on different species, they were trying to figure out the same things: how cancer lurks in the genes, how it hops from generation to generation, how and when it decides to attack. The mechanism of cancer would ultimately be the same. Breen became, in Schiffman’s words, “my academic soul mate.”

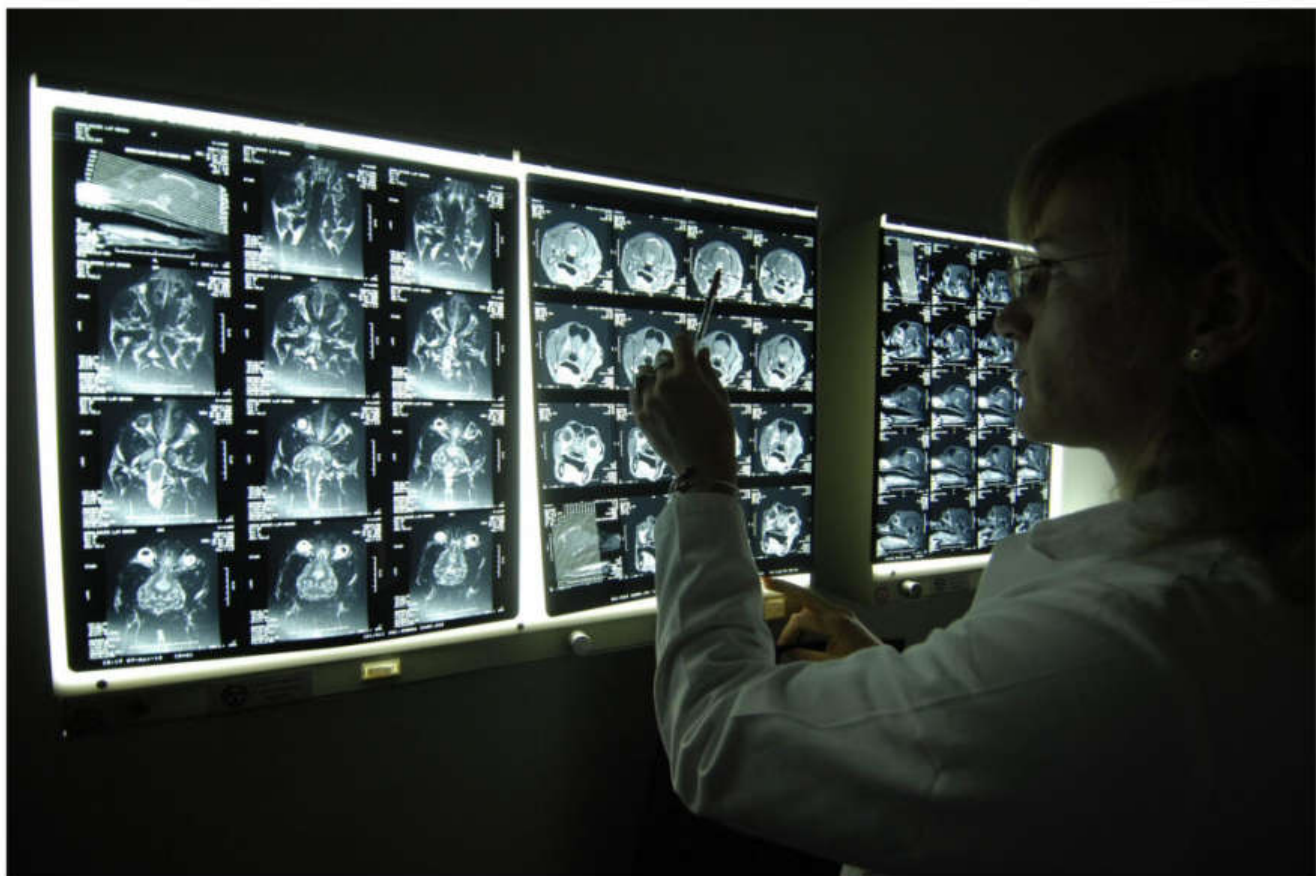
In the summer of 2012, Schiffman attended a conference about evolutionary medicine and comparative oncology, the study of cancer across different species. One of the presenters was Carlo C. Maley, an associate professor at Arizona State who researches cancer and evolution. Maley, in turn, introduced Schiffman to one of the great conundrums of cancer: Peto’s Paradox.

Peto's Paradox is named after Sir Richard Peto, the Oxford University medical statistician and epidemiologist whose work in the 1970s pointed to the link between smoking and cancer. Like all paradoxes, Peto's is incredibly complex precisely because it is so incredibly simple: Why don't big animals get more cancer than small animals? Cancer is the unregulated division of cells. The more cells an animal has, the more likely any one of those cells is to go rogue, turning into a tumor. Huge mammals like whales and elephants have many more cells than humans do, which should make them much more prone to cancer. A whale has 1,000 times more cells than humans, which should mark it for cancer right from birth. But for some reason, the whale evades that fate better than we do. Not only that, but the whale evades cancer for a very long time, with some bowhead whales living for 200 years. Some elephants live for 60 years, carrying 100 times more cells than we do.

"Evolution has solved the problem" of cancer in large mammals, Maley explained when we spoke on the phone last spring. Species survive via reproduction, and large mammals have much longer gestation periods: An elephant spends about 22 months in the womb, while whale gestation can last about 18 months. Moreover, elephants can keep reproducing until what is, for them, senescence: after 50. Elephants that are able to suppress cancer long enough to reproduce end up passing those cancer-suppressing genes to their progeny. Nature will conversely make short work of the mouse, but because it reproduces early and often, the mouse will have already passed on its genes to the next generation. Most humans also get cancer in late middle age, after they have fulfilled their reproductive duties. We benefit from the legacy of ancestors who were generally able to suppress cancer until they finished reproducing (and raising their young), which is why, in Schiffman's words, "cancer is a disease of aging." It is evolution's cruel way of thanking us for parenthood. The evolutionary legacy of elephants

and whales, with their hardy genomes, may hold the key to suppressing cancer in older humans, who are the humans most likely to get cancer. What happens inside the body of an elephant or a whale that keeps it cancer-free for all those decades? Why do almost 25 percent of Americans die from cancer, but only 18 percent of belugas do, though a specimen of the latter species can easily weigh 3,000 pounds? What secret mechanism protects the beluga, and how can we copy it?

Maley, today a close collaborator of Schiffman, says that cancer medicine has been so focused on the molecular particulars of the disease, we've failed to fully account for the fact that elephants and whales manage to avoid cancer without vitamin supplements or chemotherapy regimens. "How did evolution solve," Maley asks, "this problem that's vexing humans?"



An array of MRI scans of a pituitary tumor on a dog's head are hung up for examination at Dik Vet Small Animals Veterinary Centre in Edinburgh, Scotland. The center performs cancer treatment on small animals, as well as using MRI scans and chemotherapy treatment. Credit: Phil Wilkinson/TSPL/Camera

Press/Redux

Small, talkative and deeply intense, Schiffman says he has “permanent hat-head” from the many professional hats he constantly dons and doffs: ministering to sick children, unraveling the genomic pattern of cancer, teaching at the University of Utah. He is also starting a company, *ItRunsInMyFamily.com*, that wants to digitize family medical histories and mine them for predictive potential, a sort of Facebook for heritable disease. When we met in Salt Lake City several months ago, he was on the cusp of leaving for Boston, to meet with a researcher who wants to clone the woolly mammoth. Schiffman told me that his curriculum vitae was 36 pages long. I thought he was exaggerating. It turned out that I was correct: The CV he sent me was a mere 32 pages in length.

One day in 2012, Maureen Schiffman told her husband he needed to spend more time with their three children. Joshua Schiffman’s motto is that cancer doesn’t sleep, so neither should he. And because no cancer is more terrible than the one that afflicts a child, he has the tendency to become consumed by his research. But on this morning, he knew that his wife was right. So he drove his beloved brood to the zoo.

The Hogle Zoo is on the edge of Salt Lake City, near Emigration Canyon, through which Mormon exiles fleeing the Midwest, led by Brigham Young, passed a century-and-a-half ago. Across the street from the museum is This Is the Place Heritage Park, on the spot where Young declared his scorned flock had found its new home.

At the zoo, they went to see the elephants, where Schiffman saw a caretaker explaining to the crowd that elephants have large ears because flapping them circulates cooler blood throughout the body, which is important since

elephants don't perspire. The caretaker added that his staff collected blood from the elephants once a week.

The answer to Peto's Paradox, Schiffman realized, was flowing through the elephants' thick ear veins. Whatever genetic advantage the elephant had would almost certainly be present in its blood cells. Forgetting his wife's injunction, Schiffman approached the caretaker. The unsuspecting zoo employee was Eric Peterson, who today oversees the care of Hogle's two elephants. He is almost comically the opposite of Schiffman: huge, goateed and bald, a native of Utah who looks like a Viking warrior but loves animals and nature photography. He was conscripted into Schiffman's research on the spot, with the young oncologist pleading with him for elephant blood. Peterson could have taken him for a madman, but did not. They have been working together ever since.



An elephant trainer works with Christie, an African elephant in Schiffman's study, at the Elephant Encounters exhibit at the Hogle Zoo in Salt Lake City, March 30. Credit: Kim Raff for Newsweek

Peterson has his reasons for the collaboration. About 96 elephants are killed by poachers in Africa each day for the ivory in their tusks. Peterson thinks that if people realized

that elephants possessed the cure for cancer, they'd take greater care to save them. "Who'd want to throw away the cure for childhood cancer? This is our chance to save people and elephants."

Since 2012, the procedure has always been the same: Peterson draws elephant blood at Hogle, which then travels the short distance to Huntsman. There, in Schiffman's lab, researchers pull the cells apart, trying to understand what makes elephants resistant to cancer.

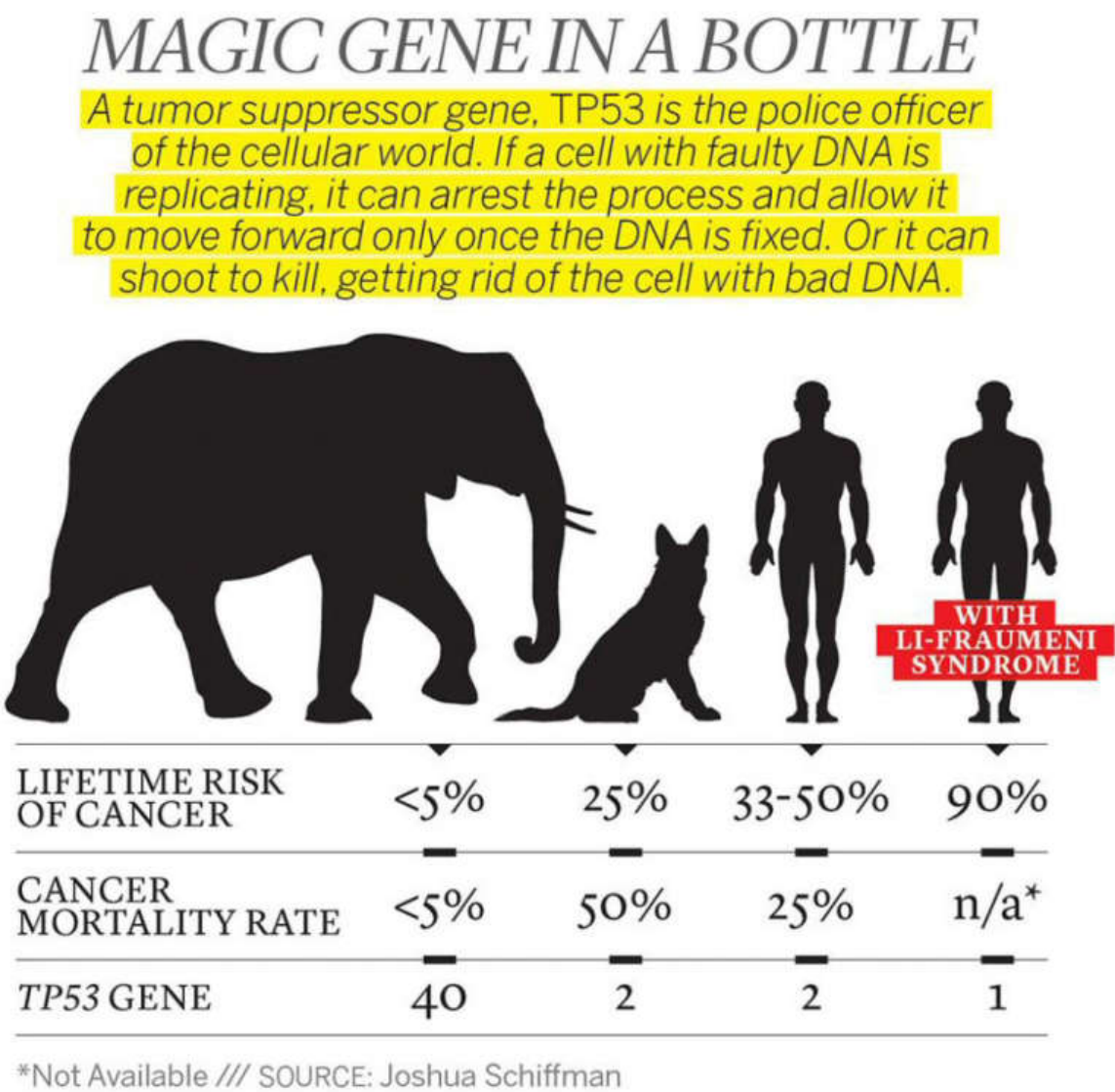
The answer almost certainly has to do with TP53, "the single most studied gene in molecular biology," according to Sue Armstrong, [a British science journalist who just wrote a book about it](#). A tumor suppressor gene, TP53 is the police officer of the cellular world. If a cell with faulty DNA is replicating, the TP53 gene encodes a protein called p53, which can arrest the process and allow it to move forward only once the DNA is fixed. Or it can shoot to kill, getting rid of the cell with bad DNA. P53 is, as one of its discoverers famously declared, ["the guardian of the genome."](#)

[Related: Personalized Cancer Treatment, Driven by a Blood Filter the Size of a CD](#)

Humans have two copies of TP53, one from each parent. It resides near the edge of chromosome 17, between base pairs 7,668,401 and 7,687,549. But the elephant has 20 versions (that is, 40 copies) of TP53, potentially giving the pachyderm body 20 times more tumor-suppressing powers than the human one. Nineteen of those extra elephant TP53 versions are retrogenes, meaning they were copied back onto the DNA from the RNA, in a sort of reverse transcription. Schiffman and his colleagues, however, do not believe that TP53 retrogenes are any less capable of keeping cancer at bay (other experts I spoke to disagree).

Considering that human cells are always dividing, TP53 does a pretty good job of forfending cancer. Having two copies of TP53 is "good but not great," says Dr. Giridharan

Ramsingh, an oncologist at the Keck School of Medicine of USC who has studied how mutated TP53 can actually lead to cancer instead of preventing it. “When you have 20 copies, it’s fantastic.”



Credit: Mike Friel

Ramsingh has also conducted research that may explain why dogs are more susceptible to cancer than other mammalian species. Though canines have two copies of TP53 just like humans, their genome is more vulnerable to the introduction of retrotransposons, which Ramsingh explains are DNA segments that, if inserted into the right section of the genome, can cause “genomic instability” and lead to cancer—that is, unless checked by p53. He says that dogs are subject to “very active transposition” in their

genomes. “In dogs, two [copies of TP53] doesn’t seem to be enough.”

Schiffman and his collaborators, who just published a paper in JAMA, found that p53 does not work in elephants quite like it works in humans. Instead of expending extra energy on fixing bad DNA, elephant p53 simply kills the cell with faulty DNA. “It’s like buying a new car rather than fixing an old one,” explains Trent Fowler, the young manager of Schiffman’s lab. Killing cells, the elephant models suggests, is a better bet than trying to set them straight.

How this knowledge will translate into human treatment isn’t yet clear, not even to the irrepressibly optimistic Schiffman. To some, the research into elephant cancer immunity is fascinating but not terribly instructive. Alan Ashworth, president of the UCSF Helen Diller Family Comprehensive Cancer Center in San Francisco, cautions that the kind of comparative oncology Schiffman practices may yield “great insights” without defeating cancer. “It’s going to be quite a long time before there’s any solid application,” he told me. “If ever.”

Schiffman thinks medicine could eventually arrive at a compound that replicates the p53-rich environment of elephants, or even find a way to insert elephant p53 into people. But first, he wants to figure out exactly how all those extra copies of TP53 work in concert to keep elephants cancer-free. He brushes aside suggestions of a silver bullet, that long-sought cancer therapy to cure the disease without leaving patients bald, emaciated and throwing up. The silver bullet holds no interest for him. “This will give us the whole gun,” Schiffman says.



Eric Peterson, elephant manager at the Hogle Zoo, shows blood he took from Christie's ear in the Elephant Encounters exhibit at the Hogle Zoo in Salt Lake City, March 30. Researchers periodically draw blood from one of the ears of Christie, and the other African elephants being used in Schiffman's study. Credit: Kim Raff for Newsweek

Schiffman inevitably returns to a sort of childish wonder at these enormous creatures that have conquered the world's most unconquerable disease. He routinely sees toddlers and teens fighting losing battles against brain tumors and blood cancers. Meanwhile, down the road at the Hogle Zoo, there are mammals whose cancer fatality rate is less than 5 percent. "They're so big, they have so many cells pulsing through their body," Schiffman says, "they should all be dead of cancer. Every time I look at an elephant, I'm amazed."

Cancer is everywhere. As Schiffman told me his story of fighting lymphoma over breakfast, I could hear the two women at an adjacent table discussing the particulars

of a breast cancer treatment: lost hair, marital strife, the usual dreadful stuff. About a week later, Schiffman was vacationing at Lake Tahoe with his family when he walked into a store with his golden retriever. A stranger approached and started talking about her dog of the same breed, who had been claimed by a bone tumor. Cancer has crept into Schiffman's family life, too. He told me it took him many years to get over the notion that every time one of his children coughed, the feared diagnosis was at hand.

After breakfast, we drove to the Hogle Zoo, where we were met by Peterson, the elephant keeper, and about a dozen members of the extended Means family. As is inevitably the case in Utah, the Means children far outnumbered the Means adults. But young and old, they were all eager to see the elephants. They had been aware of Schiffman's work with creatures. But they had never seen that work firsthand, despite its potential to save their own lives.

Looking at the Means family, you wouldn't know that many of its members are afflicted with Li-Fraumeni Syndrome, a germ line (i.e., inherited) mutation that knocks out one of the two copies of TP53 in every cell in the body. That makes it virtually certain that someone with Li-Fraumeni will get cancer. Because they will get it early and often, cancer will probably kill them, one way or another.

The patriarch of the Means family is Von, a fit airline employee in his mid-50s who does not have LFS. But his wife, Sharese, did and died of breast cancer at a very young age in 1994. She came from a family, the Thompsons, in which LFS has killed several members. Those with an LFS mutation have a 50 percent chance of passing it on to progeny; Sharese gave it to all three of her children, Tony, Andrew and Lindsay. Tony has had brain cancer, which recently returned; Lindsay has had a prophylactic double mastectomy. Tony gave all three of his children the LFS mutation; one of them currently has a brain tumor. Andrew

gave one of his children the LFS mutation. He has not had cancer, though there was a worrying growth on his neck a little while back. He knows that he can get cancer any day. So can any of us, for that matter, though our odds are a little better without LFS.



Landon, bottom left, Erica, Sophie, Tony and Tanner Means watch elephants in the Elephant Encounters exhibit at the Hogle Zoo in Salt Lake City on Monday, March 30. Tony Means has the gene associated with Li-Fraumeni Syndrome and has passed on the gene to three of his five children. The Means family is participating in Schiffman's study. Credit: Kim Raff for Newsweek

Elephants are the picture of cancer resistance; the Means family is the picture of cancer susceptibility. Someone with LFS has a 90 percent chance of developing cancer, more than twice the rate for the American population at large (43 percent for men and 38 percent for women). So while the average person may think about cancer only occasionally, those with LFS have to think about it incessantly. **Late last year, the Deseret News, the daily newspaper of the Mormon Church, profiled the Thompson family** (of which the Means family is an offshoot) and its struggles with LFS, the desire

to have children balanced against the knowledge that any one of those children could become a certain cancer victim. “Doctors have recommended that family members with the gene have annual full-body and brain MRIs, as well as blood tests and bone marrow biopsies,” the Deseret News reported. “Doctors also told them to avoid red meat, barbecued and microwaved foods, and X-rays, and encouraged them to cook with stainless-steel pots and pans.”

Li-Fraumeni Syndrome is one of Schiffman’s seemingly endless enthusiasms. Of the genetic predispositions to cancer he has been studying since arriving to Utah, none is as extreme or deadly. He treats the Means family while they, in return, treat him like one of their own. His work with them clearly dovetails with his interest in both the hereditary nature of cancer and the role of TP53 in preventing the disease.

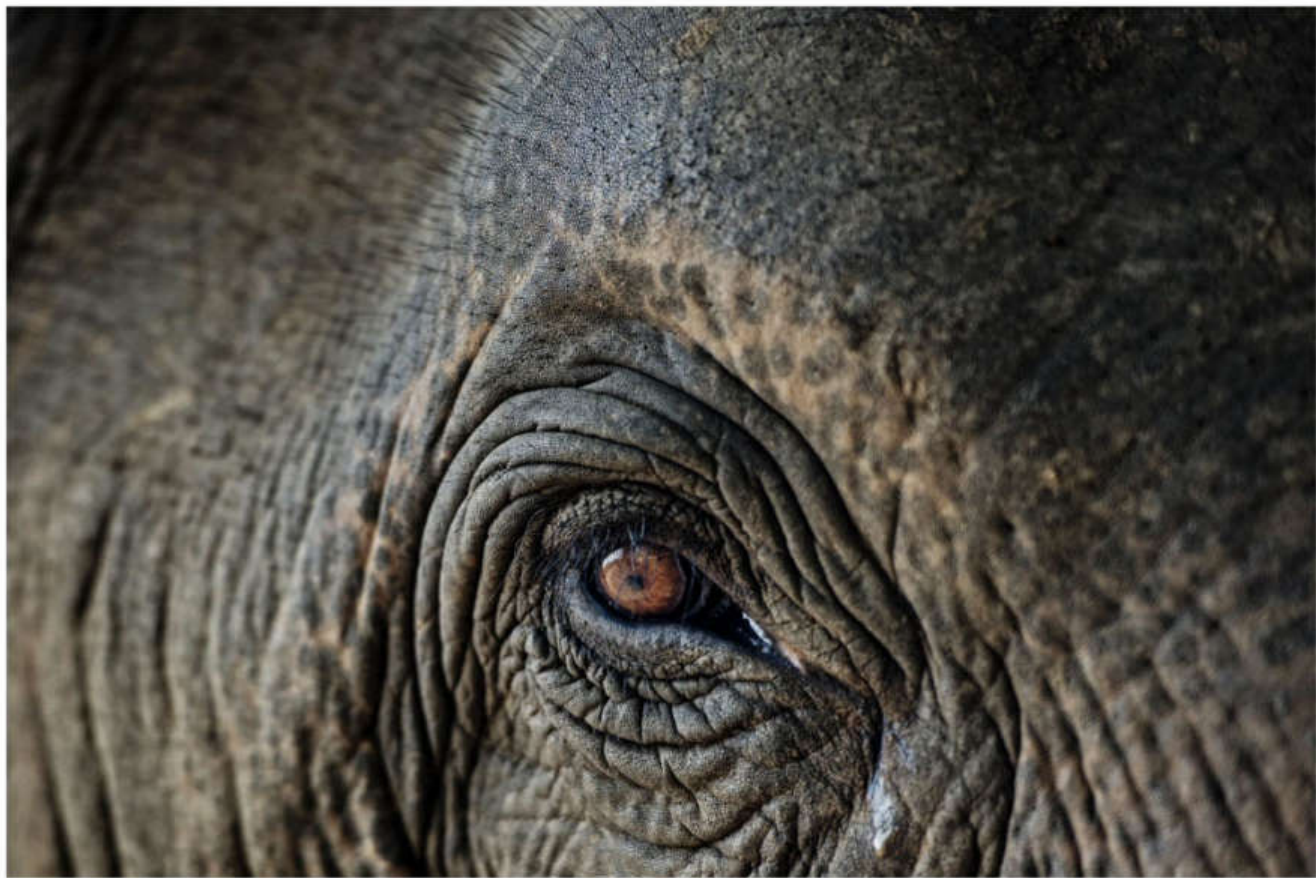
The Means children crowded against the railings as Peterson and his fellow keepers had the elephants do tricks while he performed a physical check on them. All of the Means children are too young to understand much of anything about TP53. But the adults all knew what they were looking at. Andrew, Tony’s younger brother, later revealed what was going through his mind: “Lucky elephants.”

Schiffman was right up against the elephants, pacing back and forth like a mad scientist anxious to get a world-changing experiment just right. “No cancer, no cancer,” he whispered in something between jealousy and admiration.

“That’s the cure to cancer right there,” he said a little later, as Peterson found a vein in one of the elephants’ ears and a vial filled quickly with maroon liquid.

In 2013, the University of Utah awarded Schiffman an endowed chair in pediatric research, a distinction rarely bestowed at such relative youth. It was an unambiguous sign of confidence. He has also partnered with the Ringling Bros. and Barnum & Bailey Center for Elephant Conservation in Polk City, Florida, home to the largest herd of Asian

elephants in North America, which will give him a treasure trove of new genetic data.



Scientists hope a cancer treatment could be devolved from the study of elephants. Credit: James Morgan/Gallery Stock

Yet to some, Schiffman's work with elephants is nothing more than an amusing detour. His paper on how TP53 works in elephants (which he authored with Arizona State University's Maley and several other collaborators) was rejected by some of the nation's most prestigious publications before finally finding a plenty prestigious home at JAMA.

I talked to Schiffman after each of these rejections. He was invariably disappointed, but never doubted the purpose of his work, its potential to help beat back a foe not used to defeat. "Nature's figured it out," he says. "Why can't we?"



Andy Colwell for Newsweek

A FORMER CIA INTERROGATOR ON DEATH, TORTURE AND THE DARK SIDE

SUSPECTED OF COVERING UP A GRISLY DEATH, DAVID MARTINE WAS NEVER CHARGED WITH A CRIME, BUT NEVER CLEARED EITHER.

When David Martine arrived at the redbrick federal courthouse in Alexandria, Virginia, in the summer of

2011, he was three years past his retirement and had not participated in an interrogation since 2007, when he was one of the CIA's top inquisitors. On this day, however, he was not going to be asking questions. He was going to be answering them.

The Obama administration was investigating the deaths of prisoners in CIA custody. An earlier probe into a CIA official's order to destroy interrogation videos taped at "black sites" around the globe had failed to result in indictments. But expectations were high among critics of the agency's "enhanced interrogation techniques" when John Durham, a celebrated special prosecutor, began issuing subpoenas to CIA officers linked to the deaths. Martine was near the top of his list. As chief of the CIA's Detention Elicitation Cell in Iraq, he was suspected of destroying evidence connected to the grisly 2003 death of "the Iceman," an Iraqi detainee whose ice-packed corpse was spirited out of the infamous Abu Ghraib prison with an IV jammed into it as if he were still alive.

It was hardly the first time Martine had been questioned about the incident. The CIA's inspector general had repeatedly probed him and others at the spy agency about the fate of the Iceman and other captives in Afghanistan and Pakistan. And as Martine entered the courthouse, he, like other interrogators before him, was outraged that the cases had dragged on without resolution. "It was very discouraging," Martine tells Newsweek in an exclusive interview, the first time a CIA interrogator has discussed the Iceman case or his grand jury testimony publicly. "I had been investigated for seven years."

For the next year, Durham continued to pursue a criminal investigation into the deaths. Then, in June 2012, Attorney General Eric Holder **announced** that the Justice Department was closing the cases because of inadequate evidence. The upshot: After the demise of **at least three detainees** in CIA custody and **more than** 100 other prisoners held by U.S.

forces, few were ever charged and even fewer convicted. “Wars are messy by their very nature,” Michael Pheneger, a retired Army intelligence colonel who reviewed many of the cases for the American Civil Liberties Union, **told** the Associated Press in 2007. “But it's perfectly obvious that there is no rule of engagement that would authorize someone to kill someone in custody.”

Related: Beyond Torture: The New Science of Interrogating Terrorists

The fate of the Iceman, said to be buried in an unmarked grave in a vast cemetery 100 miles south of Baghdad, is one of the many troubling mysteries in the war on terror. Barack Obama campaigned on dramatic pledges to cauterize the messy edges of the conflict “on the dark side,” as Vice President Dick Cheney called it. President Obama denounced the CIA’s “enhanced interrogation techniques” as torture and signed an executive order to close the U.S. prison at Guantánamo Bay as one of his first acts as commander in chief. Today, for all anyone knows, Guantánamo could remain open indefinitely. The cases of the five surviving 9/11 conspirators, as well as those of other top alleged terrorists, remain unresolved. And the government, not to mention the public, is still divided over how to sweep up, hold, question and prosecute foreign terrorists.



Tents of prisoners of Abu Ghraib prison are seen from a guard tower May 5, 2004. Six U.S. soldiers were reprimanded and six others faced criminal charges in connection with abuses at the Abu Ghraib prison after photographs were published and broadcast around the world showing naked Iraqi prisoners stacked in a pyramid or positioned to simulate sex acts. Credit: Reuters

Despite the profound differences between the prisoners and CIA interrogators, there is a bizarre parallelism between their unresolved fates. Many of the prisoners, according to recent investigations, were minor Al-Qaeda functionaries. A few were child soldiers swept up from the Afghan battlefields in the post-9/11 chaos. After more than a decade, many seem slated for indefinite detention without trial. Most have never been charged with a crime or never been cleared. Likewise, though free, Martine and others like him have not been charged or had their names cleared either. Today, both the interrogators and prisoners remain stuck in a disturbing limbo. And so too are the American people. For them, the identity of whoever was responsible for the deaths of prisoners and other serious crimes remains a lingering, bloody question mark.

Hiding the Body

Early on the morning of November 4, 2003, a team of Navy SEALs with CIA support captured an Iraqi by the name of Manadel al-Jamadi. U.S. intelligence suspected him of being involved in the bombing of the Baghdad headquarters of the Red Cross, one of five synchronized attacks that killed 35 people and wounded 244. Jamadi resisted violently and suffered what an autopsy later determined were three broken ribs. Before dawn, the injured, manacled captive, naked from the waist down and with a bag over his head, was seen being led into Abu Ghraib prison. A “ghost prisoner,” like many in CIA custody, Jamadi’s presence was never recorded in the facility’s log. Roughly an hour later, he was dead.

A military policeman later told investigators that the sole CIA officer in the shower area at Abu Ghraib where the prisoner was chained, Mark Swanner, had asked him and another guard to hoist Jamadi higher on the wall. That despite the fact that his arms were already “almost literally coming out of his sockets,” one of the soldiers told investigators. “I mean, that’s how bad he was hanging. The... [CIA] guy, he was kind of calm. He was sitting down the whole time. He was like, ‘Yeah, you know, he just don’t want to cooperate. I think you should lift him a little higher.’”

Related: How a Botched Translation Landed Emad Hassan in Gitmo

The autopsy report called the death a homicide, the result of “blunt force trauma” and “asphyxiation.” But of the 10 Navy SEALs involved in the capture of Jamadi, only one, team leader Lieutenant Andrew Ledford, was tried in a military court, and he was acquitted of striking the prisoner and lying to an investigator, among other charges. The CIA referred Swanner to the Justice Department, which declined to press charges. But in 2011, he was called before Durham’s grand jury. Swanner has consistently declined to comment on the incident.



The injured body of detainee Manadel al-Jamadi is packed in ice and plastic in late 2003 at the Abu Ghraib prison in Baghdad, Iraq. Martine says he helped hide the death from other prisoners at Abu Ghraib. Credit: AP

Martine, who was asleep in Baghdad's secure Green Zone when Jamadi was captured, says he got a call from Abu Ghraib telling him of the prisoner's death around 4:30 a.m. He says he rushed out to confer with CIA colleagues and U.S. military personnel guarding the facility. The former

CIA man concedes that the agency and the Navy SEALs who captured Jamadi bear some responsibility for his death because of the basic fact that he died in their custody. “When you ask that simple question, Did we cause this man's death? That's a simple answer—yes,” Martine tells Newsweek. “But were we negligent in causing his death? I don't think that we were.”

Martine also concedes that the CIA inspector general held him partly responsible for the decision to ice Jamadi's body, preventing its deterioration until CIA and military personnel hatched a scheme to hide the death: They taped an IV to the frozen corpse, which made it look like the prisoner was still living as they smuggled the body out of Abu Ghraib, steps that led many to suspect a cover-up. Martine acknowledges that, in fit of wartime dark humor, he dubbed Jamadi's corpse “Bernie,” a reference to the comedy *Weekend at Bernie's*, in which the body of a man is marched around by his friends as if he were still alive. “I suppose a lot of people would think that was callous and disrespectful,” he says.

Another major issue was the nylon bag used to cover Jamadi's head. Once he died, the hood was removed and blood came gushing out of his mouth “as if a faucet had been turned on,” according to the testimony of a guard. Then it disappeared. Martine says a CIA security officer gave him the hood days later, when it was found in the van used to transport the body. Martine says he placed it in a plastic bag and “threw it” on a shelf in his Green Zone office. Months later, in a rush before he returned to the U.S., he says he tossed away the reeking bag. With that, the case may have dissolved into a footnote. But then the notorious Abu Ghraib prison scandal erupted with its gruesome photos of American soldiers humiliating and abusing Iraqi prisoners. Several showed soldiers grinning with a thumbs-up sign over the Iceman's battered corpse as if it were a hunting trophy.

The hood would later emerge as a centerpiece for allegations that Martine destroyed evidence. It was a big, stinking clue for Durham. During Martine's six-hour grand jury appearance in 2011, he says, the prosecutor asked him, "If the hood wasn't important, why did you keep it on your office shelf? And if it was important, why did you throw it out?"

Martine admits it was "a good question." But Durham's questioning became even more contentious, he says. "He just kept pushing and pushing.... 'Why are you hiding things, and what else should you be telling us?' I mean, I didn't know what to say." His answer then and now: There was no formal investigation that he knew of at the time, and he was never asked about the missing blood-stained shroud until much later. Another CIA officer who was also repeatedly questioned about the Iceman incident snapped, Martine says. "At one point, he said—and they used this against him—I wish we had just killed him, because then I could just say he deserved to die."

Despite Durham's aggressive questioning, Martine says there was no conspiracy to cover up Jamadi's death. He admits he helped plan the smuggling of the body out of Abu Ghraib. It made "perfect sense," he says, to conceal his death from other captives, who might have erupted into "an immediate riot" had they known of the prisoner's demise at the hands of the Americans. But he says he never concealed the events from the CIA or from the U.S. military. "We were never hiding this from our chain of command, either military or agency," he says. "It was not a covert op."

Related: U.S. Develops New 'Soft' Techniques To End Torture

Perhaps, but Martine also edited and filed a report to CIA headquarters that omitted classified details of the Iceman's death that some thought he should have included. To Durham and others, it appeared he might have been

involved in a crime, suspicions that follow Martine to this day.



Martine was suspected of covering up the grisly death of an Iraqi prisoner. Like so many others in the war on terror, he was never charged with a crime but never cleared of one either, something that still haunts him...and America Credit: Andy Colwell for Newsweek

‘You Could Twist This’

A handsome man wearing a Rolex and sport shirt, Martine, 59, appears tanned and relaxed as he drives his black Mercedes SUV to the lakeside Erie Yacht Club in Pennsylvania. Erie is the town where he grew up, where his father was a school principal and his mother a school counselor. In the dining room, friends and fellow club members greet him warmly. He seems eager to show that the controversies surrounding his role in the war on terror did not follow him here.

Yet as the former chief of overseas polygraphs, interviews and interrogations labors through the details of his story, it's clear he remains troubled. The multiple investigations, he says, have wrecked long friendships among the interrogators, because they were forbidden to talk to one another, lest they be accused of coordinating their testimony—"the conspiracy thing," as he calls it.



The Sati family follows President Bush's interview broadcast on Arab television station Al Arabiya at their home in Baghdad, Iraq, May 5, 2004. Bush said in the interview that the treatment of prisoners at Abu Ghraib prison was "abhorrent" and does not represent "the America that I know." For many Iraqis, the photos that emerged from the Abu Ghraib scandal tainted the American occupation. Credit: Muhammed Muheisen/AP

Sitting at a table in the crowded dining room, Martine explains why he is talking with Newsweek. “I want this to go public,” he says. “I never employed hard physicality as a method of interrogation.”

“You know, this story could go either way,” he adds, ignoring the menu placed before him. “You guys could leave here saying, ‘That guy is hiding information. They did cover this up. There was a murder.’” Opening up to a reporter risks his “wonderful life here, with a great family and great friends and a great career,” he says. “You could twist this in a way that there would be a dark cloud that would follow me forever.”

Martine first invited attention in 2011, when he outed himself as a former interrogator in a little-noticed [article](#) in his local newspaper in which he volunteered he had been subpoenaed to appear before Durham’s grand jury. “If we crossed a line, I am part of that,” he was quoted as saying, “but I think I am asking the same question everyone else is: Why are they doing this again?”

Durham’s probe of the CIA ended not with a triumphant press conference but in a puzzling silence. Once described by a friend as seeing the world as “good vs. evil,” the resolute prosecutor of Mafia thugs, politicians and corrupt FBI officials had waded into the CIA’s many shades of gray and emerged empty-handed. Whether he asked jurors to indict Martine or any of the other CIA targets remains unclear. Only years later did he issue a little-read statement, in response to a Freedom of Information lawsuit, detailing, without further explanation, the procedural steps underpinning his decision not to file charges. Contacted by Newsweek, Durham declined to comment.

Martine says the outcome was disappointing. “It’s certainly not been a good moment for me,” he says. “Not that you expect to come back a hero, but you expect to come back with a semblance of respect and a, ‘Hey, job well done.’”

That's not going to happen. And so now, years later, Martine seems to be seeking a kind of public exoneration. "I feel I can stand up and tell of every procedure I have employed," he says, "and I think America would stand behind me."

'Torture Works'

A large red, white, green and yellow Kurdish flag hangs on the wall behind Martine's desk at Gannon University, a small private Catholic college in Erie where he teaches courses on criminal justice and terrorism. "The princes gave it to me," he says proudly, referring to the sons of Jalal Talibani, the legendary Kurdish independence leader and politician. "They wouldn't be too pleased to learn we did interrogations in their parents' basement," he adds, chuckling. "The younger one wasn't supposed to be involved."

Years earlier, Martine's unlikely path to becoming a senior CIA interrogator began with an arrest—his own—as a 13-year-old, when he took a ride in a "borrowed" car with some teenage buddies. A probation officer "set me straight," he says, launching his fascination with police work. At the University of Dayton in the late 1970s, he got a job as a campus cop to help defray college expenses, eventually snagging an internship as a juvenile probation officer. Then, equipped with a degree in criminal justice, he applied to the FBI. Within a few years, he was an evidence technician scouring for clues at the site of John Hinckley's assassination attempt on President Ronald Reagan. Along the way, he earned a master's degree in forensic science from George Washington University, took graduate courses in psychology at the University of Virginia and had thoughts of going on to law school to qualify as a full-fledged FBI agent.

But when his wife's pregnancy forced him to abandon the idea, he followed a tip from a friend about a job at the CIA. Soon he was headed up the Potomac to Langley,

Virginia, and a dramatic new turn in his career, as an undercover agent in the spy agency's office of security. The job involved the sometimes harrowing work of moving defectors from place to place, but it also took him to Latin America, Africa and the Far East on a range of security assignments. Eventually, he became a senior CIA training officer in polygraphs and interrogation, "and most of that work was done in South America."



Naked detainees with bags placed over their heads are placed into a human pyramid as Spc. Sabrina Harman, middle and Cpl. Charles Graner Jr., above, pose behind them in late 2003 at the Abu Ghraib prison in Baghdad, Iraq. Many of the Abu Ghraib photos showed Americans humiliating and abusing Iraqis. Some even showed soldiers grinning over the Iceman's battered corpse. Credit: AP

The region was plagued by war. Military regimes, most backed by Washington, ruled most of the continent. The secret police of Chile, Argentina, Paraguay and Brazil were conspiring in assassinations of local leftists and dissident exiles. The CIA was helping prop up the brutal dictatorships of Guatemala, Honduras and El Salvador while fielding

a guerrilla army to bring down the Marxist regime next door in Nicaragua. The casualties in El Salvador's civil war were catastrophic, with 70,000 to 80,000 dead, 8,000 disappeared, about 550,000 internally displaced and another half-million in exile. "It was an exciting time in Central America," Martine says, at least for his career.

Latin America also was where he began to conclude—his assessment reinforced by assignments to U.S.-client regimes in the Middle East and Asia—that "torture works." "No one wants to be honest about it!" he volunteers in an email. "Torture has always worked."

Not that it's right, he quickly adds. But it's wrong to say it's inefficient (as FBI interrogators have argued). The false confessions and phony leads prisoners give up under excruciating physical and psychological abuse are not a big problem, he insists: You just check them out. "If we are talking torture, and I mean real torture, where we are going to start taking off fingers or you're going to saw off his foot...they will tell you anything you want to hear," he says. "You tell them that if they give [you] false information, you'll be back the next day sawing off their other foot."

"They are not going anywhere," he says. "So you have tremendous control over this person's tolerance for pain—they are going to give you everything they know.... It's just a matter of when. If you're willing to burn out an eye and then say, 'We're going to check all this, and tomorrow we'll burn out your other eye,' people are going to tell you everything that they know."



This and similar leaked photos of prisoners at Abu Ghraib sparked a global backlash at the U.S. and its treatment of Prisoners of War from wars in Iraq and Afghanistan. Credit: AP

So where did he learn firsthand about the efficacy of torture?

The question seems to take him aback. "The only experience that I would have from that is from some of the things that we had come in later," he says vaguely, declining to discuss classified specific cases. "Now, obviously, if it's torture with any country, we backed out," he adds. "But when you see how some people are treated in other dungeons and other controlled areas..." He shakes his head.

And he personally had seen that?

"I have, of course, of course."

Where? In the prisons of U.S. allies known for their brutality, like, say, Egypt?

"Sure," he says. "And in Central America. And in South America." Prisoners told him about it afterward, he says.

Given his job, such conversations probably didn't take place too far from the torture chambers. But it's a distinction without a difference, according to Michael Scheuer, who headed the CIA's Osama bin Laden tracking unit from 1996 through 1999. "There were no qualms at all about sending people to Cairo" and other brutal places to be interrogated, Scheuer told a congressional panel in 2007. There was a "kind of joking up our sleeves about what would happen to those people in Cairo, in Egyptian prisons." The CIA merely picked up the fruit the Egyptians had shaken from detainees, he said.

Such practices, of course, allow CIA people like Martine to distance themselves from torture and profit from its supposed benefits. Torture is unworthy of America, he says. And he insists it was rarely employed by the U.S., even in the years immediately following the 9/11 attacks, when "the interrogations of CIA detainees were brutal and far worse than the CIA represented to policymakers and others," according to last year's Senate Intelligence Committee **report**. "I don't think we get the credit deserved," he says, "for standing on the right side of humanity in our treatment of all those in our custody."



Sgt. Michael Smith, left, with his black dog Marco, and guard detainee Mohammed Bollendia with Pvt. Ivan L. Frederick II, right, at the Abu Ghraib prison in Baghdad, Iraq on Dec. 12, 2003. Credit: AP

This sunny statement contrasts violently with the brutal death of the Iceman. It also provokes derision among those who know what went on in CIA black sites or military-run jails. One of the most prominent is former FBI senior counterterrorism supervisory agent Ali Soufan, who famously denounced the CIA's repeated waterboarding over a period of months of low-level Al-Qaeda functionary Abu Zubaydah, until he "confessed"—falsely—that he was a top operative in the militant group, Soufan has testified to Congress. "I cannot believe that in the United States of America, we are still debating if torture is a good idea or not, or if it is effective or not," Soufan says. "Really—in America!"

Martine disagrees—to a point. It's "wrong," he says. But despite the damage the exposure of torture inflicted, and continues to inflict, on the United States, he says the CIA should never take the threat of it off the table when it rounds up a terrorist suspect. "If they're thinking, They got me in the

middle of the night, and they are taking me to a small dark room, and they are going to blow my brains out—I think that that may save lives. In reality, we're not gonna. [But] we're going to put on a little scary reality show for them.”

Soufan dismisses such talk. He points out that the Senate Intelligence Committee’s 6,300-page investigative report on the CIA interrogation program, “not to mention all other reviews, such as the CIA's own inspector general report, all came up with the same conclusion: Torture does not work and is harmful to our national security.”

Even former CIA acting General Counsel John Rizzo, who argues that the multiple investigations into agency interrogators should have been dropped long ago, says the CIA’s interrogation mess in Iraq could have been avoided had agency personnel followed these instructions: “Don’t hold prisoners yourself,” he said in a 2012 interview with the Constitution Project, a bipartisan watchdog group based in Washington, D.C. “Defer to the military on questioning. Only participate when invited to do so. Don’t try to force yourself into these interrogations.”

Yet the CIA constantly thrust itself into the interrogation front lines, such as when Martine followed U.S. invaders into Iraq in 2003 in search of Saddam Hussein’s much-advertised (but nonexistent) weapons of mass destruction. Soon he found himself face-to-face with the notorious “Dr. Germ,” Rihab Taha, the woman who headed Iraq’s biological warfare program. “I cracked her deputy,” Martine says. “In fact, we went under a sink in his home and found a biological pathogen.”

But the boss lady was different. “She was mean, and she was uncooperative,” he says. To survive under Hussein, she had to be tough—and smart. “And she knew, as a female, she could win this,” Martine says. “And she did.” By “as a female,” he implies that women captives escaped the rough stuff meted out to men. And he didn’t lay a hand on her, he says. The result: Taha virtually talked him to death. “She

was very measured, and she had her lines, and she never moved from those lines.” He seems to regret that he couldn’t have been more forceful. “With her, I still feel to this day, 100 percent, that there was much, much more information that she could have offered to us, and she chose not to.” Instead, “she was released,” he says with some disdain. And where is she now? “Living in Iraq somewhere, probably.”

‘Forced’ to Do Ugly Things

And the Iceman—what happened to his body? Martine doesn’t seem to know or care. “Got me,” he says.

Just another unresolved case, in his mind. And, ironically, very much like his own—although he has the benefit of being alive and free. The same cannot be said for the 114 prisoners languishing in Guantánamo, the first of whom arrived more than 13 years ago. More than 50 of the inmates have long been cleared for release. Roughly 50 more will apparently not be tried but are considered too dangerous to be set free and could be detained indefinitely. Finally, there is an alleged core of Al-Qaeda operatives facing military trials that, after many years, still show few signs of getting off the ground.

Indeed, the legacy of the torture years remains mired in ambiguity. While John Helgerson, the CIA’s inspector general from 2002 to 2009, reportedly made eight criminal referrals to the Justice Department for homicides and other misconduct carried out by CIA interrogators, none resulted in indictments or statements that the accused had been cleared of wrongdoing.



The bodies of three Iraqi detainees in the bed of a truck in Baghdad. Critics say few Americans have been held accountable for the crimes they committed in the war on terror. Credit: Reuters

All of which is manifestly unfair, says Martine, even though prosecutors have no obligation to “clear” anyone they investigate. After Durham went home, the Justice Department said only that “the admissible evidence would not be sufficient to obtain and sustain a conviction beyond a reasonable doubt”—hardly a benediction. And although Martine and others have never come close to being publicly exonerated, he and his colleagues need not worry about being summoned back to the redbrick courthouse in Alexandria. They may even have gotten off easy—especially since the published photos of the Iceman’s battered corpse produced months of horrible worldwide publicity for the CIA and the United States.

Yet Martine insists the case against him and the others was “political.” “Certainly,” he says, Obama and Holder “wanted to deflect and put this back on [President George W.] Bush.” He compares himself and those who were

ordered into the murky war on terror to veterans of Vietnam, upon whom history's kindest judgment seems to be that they were forced to do ugly things. "And we come home, and they can sort of pursue something like this, over and over again over the years," Martine says.

In the warm fellowship of the Erie Yacht Club, Martine may remain a hero to many, even as a large body of critics continue to view anyone associated with the CIA's "enhanced interrogations" as monsters. Other Americans have simply moved on, leaving Martine and those like him hostage to their consciences and the judgment of future generations.

Case closed: unresolved.



Abd Doumany/AFP/Getty

HOW PUTIN WINS IN SYRIA

THE KREMLIN'S MILITARY ACTION INTO SYRIA MIGHT SAVE ASSAD. LESS CLEAR IS WHETHER IT CAN SAVE RUSSIA.

The Russians called it Center 2015: a series of military exercises they carried out in mid-September involving some 95,000 troops. In contrast to common practice, Moscow outlined publicly with great specificity what type of exercises its troops conducted. Its Hind attack helicopters, for example, practiced rocket and bombing

runs against ground targets and provided air cover at very low altitude to ground forces. They fired unguided rockets against military columns below. They practiced flying with one engine off—simulating engine failure—at just 650 feet above the ground. "These are the kinds of skills," noted a **report** from the Institute for the Study of War, "that would be required if the Russians intended to provide close air support to Syrian, Iranian, or Lebanese Hezbollah troops in contact with rebel forces."

[Related: **Where the Candidates Stand on the Trans-Pacific Partnership**]

Which they plainly did, because that's what Russian forces are now doing. Whether Russia's incursion into the increasingly deadly Syrian civil war was foreseeable or not—and if it was, whether it was deterrable—is now moot. Russian President Vladimir Putin has in an instant changed markedly the course of a conflict that has claimed at least 250,000 lives and displaced millions—numbers that may yet grow much higher. Moscow and Iran, Damascus's heretofore primary benefactor, are now making it clear that they are all-in when it comes to defending the current regime. On September 21, Iran began dispatching hundreds of elite Quds Force soldiers—the expeditionary arm of Iran's Revolutionary Guard—as well as its leader, Qassem Suleimani, to lead ground assaults backed by Russian airpower against the forces opposing Syrian President Bashar al-Assad. They have since been joined, according to intelligence reports, by deployments of Iranian and Iraqi Shiite militias.

They are there for a very specific reason, which is not simply to combat ISIS. By October 5, in fact, the Pentagon had **become convinced** that the majority of Russian air strikes thus far had targeted not ISIS units, but U.S. trained rebel groups in various parts of the country. The Russian troops are there to combat anyone and everyone who might fight against Assad, who the U.S. and its coalition

partners still insist has to go. Indeed, on September 29, at the United Nations, Saudi Foreign Minister Adel al-Jubeir could not have been clearer: “Assad has no future in Syria. Any attempt to whitewash him or make him acceptable is a nonstarter,” he told reporters. The Russian intervention, as President Barack Obama, al-Jubeir and everyone else involved understands, comes at a critical moment. Despite the relative passivity and ineptness of the United States in funding and training anti-Assad rebels, the dictator’s position was slowly eroding as he attempted to fight off multiple rebel groups of varying sectarian and ethnic stripes (everything from hard-core ISIS fighters to more “moderate” Sunnis to Syrian Kurds). For Putin, a man who says repeatedly—because he believes it—that the greatest “geopolitical catastrophe” of the 20th century was the demise of the Soviet Union, the motivation is straightforward: “You do not give up your friends,” as Alexei Makarin, deputy director of the Center for Political Technologies, a Moscow think tank, puts it.

But from Moscow’s perspective, there likely was more to it than that—much more. The move provides a foothold in a part of the world that the Soviet Union was kicked out of four decades ago. At a moment when the United States appears to be washing its hands of the increasingly bloody and chaotic region, it gives Russia an expanding military presence in the Mediterranean on the doorstep of a NATO ally (its newly established airfield at Latakia in eastern Syria sits just 75 miles from the border with Turkey), and the gambit may yet serve as leverage with the West as Putin seeks to get out from under economic sanctions imposed as a result of Moscow’s annexation of Crimea in Ukraine.

A senior Arab intelligence officer in the region called Putin’s actions “potentially game-changing.” Obama seemed less impressed—or less willing to congratulate the Kremlin on its cunning, at least in public. All this was done out of a position not of strength but of “weakness,” he said at a

White House news conference in early October. "This is not a smart strategic move on Russia's part."

Throughout much of the Middle East, that declaration was met with howls of derision (for reasons that we will get to); at home, it was dismissed by many as petulant spin from a president who had been badly wrong-footed in this war. But whether Obama had been wrong-footed or not, the logic behind what he said is not obviously wrong. That Syria's a snake pit couldn't be more obvious. And it's true, as sources in Moscow and the Middle East acknowledge, that if Russia decides more troops are needed to bolster its position, it may be drawn into a quagmire it can ill afford. "The [Russian military] bases in Syria have taken on sacred significance for [us] now," says former Kremlin adviser turned critic Gleb Pavlovsky, "and we cannot surrender them. This will take soldiers."

[Related: [Syrian Rebel Groups Appeal For Regional Alliance to Fight Russia and Iran](#)]

Despite a still-grim economy in Russia, Putin remains popular in his country. Most of what he does to show that Moscow is a serious player on the world stage only buttresses that good opinion. But the public appetite for a war against anti-Assad rebels in Syria appears limited, to say the least. The Levada Center, one of the few organizations in Moscow thought to be a relatively credible source of information about public opinion in Russia, found in a poll taken before the bombing in Syria started that found that two-thirds of the respondents were against deploying ground forces there. (The same day the poll appeared, Putin, while visiting the U.N., said any such deployment was "out of the question.")



Russian President Vladimir Putin and his foreign minister, Sergey Lavrov, left, met John Kerry at the United Nations in late September, just days before launching airstrikes in Syria. Credit: Mikhail Klimentyev/RIA Novosti/Reuters

In Sunni Arab capitals around the Middle East, one word is being uttered with increasing frequency: "Afghanistan." Not the ongoing post-9/11 U.S. war there, but the one before it: when the mighty Soviet army was driven out by jihadi rebels (who were funded by Saudi Arabia and other Gulf Arab states) and armed by the United States. As a student of what is known in Russia as the "catastrophe," Putin knows that the humiliating Soviet withdrawal came in 1989, after a decade of war. By 1992, his beloved Soviet Union ceased to exist. He also knows that the same countries that aided the Afghan rebels in the 1980s are now funding anti-Assad rebel groups. So should the United States just say, "After you, Vladimir Vladimirovich. Be our guest! Syria's all yours," as GOP presidential front-runner Donald Trump, among others, has advocated? If at least part of Putin's plan is to combat ISIS—which, after all, the U.S. seeks to "degrade and destroy"—shouldn't we welcome Moscow's intervention, as Secretary of State John Kerry indicated Washington might?

The reasons why that's probably a terrible idea are numerous. The deployment of the Russian military and increased Iranian ground forces means Assad can stay in power for as long as his two patrons desire. At the same time, there is also little evidence that the axis supporting Assad has the wherewithal to crush the Sunni-backed rebel groups. It's hard, therefore, to draw anything but the grimmest of conclusions. Syria—already a “geopolitical Chernobyl,” as former CIA chief David Petraeus recently put it—is about to get worse. As Frederick Kagan, an architect of the surge in Iraq under George W. Bush and now director of the Critical Threats Project at the American Enterprise Institute, and Kimberly Kagan, founder and president of the Institute for the Study of War, **wrote**, “The advent of Russian reinforcements is likely only to cement a brutal stalemate that has driven millions of people from their homes, radicalized the region, caused a humanitarian apocalypse, and turned Syria into a magnet for global jihadists.” (Global jihadis, he might have added, who may well fight another day in the capitals of Western Europe or even the United States.)

[Related: **Global Poverty Rate Likely to Fall Below 10 Percent For the First Time: World Bank**]

The Russian move into Syria will only deepen concern among Washington’s traditional allies in the Middle East about U.S. goals in the region. Israel, Jordan, Saudi Arabia and other Gulf monarchies have all watched, with varying degrees of alarm over the last five years, as the Obama administration zealously pursued a nuclear deal with Iran, an archenemy to all of those countries. Obama did so over their strenuous objections. Many suspect—indeed, some are convinced—that his overarching goal in the region was to legitimize Iran, integrate it into the international system so as to, as he put it a **2014 interview**, create an “equilibrium” between “Sunni, or predominantly Sunni, Gulf states and Iran in which there's

competition, perhaps suspicion, but not an active or proxy warfare.”

If Obama’s goal was to get Iran to that place, starting with a nuclear deal, how likely was it that he was going to attack Syria in the wake of its chemical attacks, even having drawn a “red line” in 2012? Similarly, Tehran didn't want a more aggressively funded and trained Western-backed rebel force in Syria, and Obama hasn't done much to provide one. (Al-Jubeir, at a press conference September 29, said flatly, “Had there been more firm action [there], we would not be in the situation we’re in.”) This relative inaction has bred toxic suspicions throughout Washington’s traditional allies in the region—suspicions that are rarely voiced publicly but have hardened over the past 18 months. Simply put, they believe the Obama administration has not just pulled away from the Middle East but rather switched horses—backing Iran in search of that “equilibrium” the president spoke of last year. The White House has consistently and furiously denied this. Now, with Putin in Syria and Obama just 15 months from his White House retirement, the likelihood that the U.S. will do anything of consequence to change the status quo on the ground is slim. It seems extremely unlikely that Obama will risk a direct conflict with Putin. Any hope of a no-fly zone in Syria, or even an intensification of U.S. airstrikes, is likely gone as well. Indeed, with Europe under tremendous pressure from the crush of Syrian refugees, the fear among Sunni Arabs is that the West will latch on to Putin and Iran as the only hope for reining in Assad. But that’s not why Russian troops are now fighting in Syria. They are there to prop up Assad by helping him destroy “terrorists”—defined as anyone fighting against his regime. It’s been about four and a half years since Syria’s civil war commenced—since it became a “geopolitical Chernobyl.” The meltdown may have only just begun.

Additional reporting by Marc Bennetts and Claudia Parsons.

This story has been updated to reflect latest reports that U.S. officials say most Russian strikes are targeting non-ISIS sites.



Peter Parks/AFP/Getty

WHY CHINA IS SUDDENLY INCREASING ITS STAKE IN THE U.N.'S TROUBLED HUMANITARIAN FORCES

**WILL CHINA'S INCREASED COMMITMENT TO THE
PEACEKEEPING FORCES BE A BLESSING OR A CURSE?**

China used to disdain the U.N. For the three decades after it joined the Security Council in 1971, it mostly didn't

even bother to vote on whether to approve peacekeeping missions, which it viewed as interference in the sovereign affairs of others. So when President Xi Jinping announced at the U.N. General Assembly session on September 28 that China would overhaul global peacekeeping with 8,000 extra troops and hundreds of millions of dollars in new funding, he not only upstaged President Barack Obama, who was holding his own peacekeeping summit across town at the time, but signaled a new Chinese attitude toward international intervention. Rather than just oppose it, China now wants to remake it.

Xi announced China would set up a 10-year, \$1 billion fund for the U.N.'s work in peace and development, create a permanent, **8,000-strong Chinese peacekeeping** quick-reaction force and give \$100 million of military assistance to the African Union over five years so the union can create its own crisis intervention force. At a stroke, by adding those 8,000 troops to the 3,000 peacekeepers it already contributes, China became the world's biggest provider of peacekeepers. (The U.S. remains peacekeeping's biggest funder but supplies just 82 soldiers.)

Xi added he expects China's bigger role to grant it greater influence over peacekeeping and all humanitarian intervention. No longer should the "big, strong and rich...bully the small, weak and poor," said Xi. "Those who adopt a high-handed approach of using force will find they are only lifting a rock to drop on their own feet."

Many fans of peacekeeping welcomed China's initiative. Gareth Evans, a former Australian foreign minister who was instrumental in formulating and building acceptance for the Responsibility to Protect (R2P) the U.N. principle under which all humanitarian military interventions operatesays China's initiative was "wholly appropriate" to the multilateralism that peacekeeping is meant to embody.

Skeptics, however, noted that while China now stresses international consensus, it has recently been

acting aggressively in its own neighborhood. It is currently involved in tense disputes over strategic islands in the South China Sea with Japan, the Philippines, Brunei, Vietnam and Taiwan, and is in something of a conventional arms race with the United States. A particular concern prompted by Xi's speech was his emphasis on Africa. The Chinese president said Beijing "firmly supports developing countries' greater representation and influence, especially African countries, in international governance."

To some, this sounded more like self-interest than altruism. As well as being the location for nine of the U.N.'s 16 peacekeeping missions, Africa is where China now has tens of billions of dollars invested in commodities and infrastructure. Keeping the peace in places where China has put its money raises the possibility that Chinese peacekeepers might see their role as protecting things as much as people.

Then again, maybe a little self-interest is exactly what U.N. peacekeeping requires. The history of peacekeeping is littered with failures in places where the famous blue-helmeted forces have no stake in the conflicts they are meant to be keeping a lid on. Take, for example, the world's biggest peacekeeping operation, the U.N. mission in Congo (MONUSCO). Its nadir, and the lowest point for all U.N. peacekeeping, came in November 2012 in Goma, Congo's main eastern city. Equipped with tanks, helicopters, planes, armored personnel carriers and an annual budget of \$1.3 billion, MONUSCO's 20,000 men were facing off against 1,000 rebels armed with Kalashnikovs, rocket-propelled grenades and a few ancient tanks and artillery pieces.

When a rebel tank fired a single shell into Goma, the U.N. took decisive action. It fled. The peacekeepers abandoned the civilians they were mandated to protect and retreated to their bases or left the city altogether. The rebels, called the M23, took Goma without firing a further shot. By evening, crowds were gathering in front of U.N. bases,

demanding that those peacekeepers who had not already left do so immediately. "You could not defend us," they shouted. "You are useless. You are dismissed."

Looking on in dismay was Alan Doss, head of MONUSCO from 2007 to 2010 and today executive director of the Kofi Annan Foundation in Geneva. "I just don't know if there was a rationale," he now says of that retreat. "I couldn't explain it." On the ground at the time, a Uruguayan U.N. officer told a Newsweek correspondent that the reason for the U.N.'s timidity was simple. "I have a wife and a son back home," he said. "My men have families too. I want us to get out there, but it's not safe. I have to make the right decision for everyone concerned."

The officer was expressing the grand flaw in peacekeeping's noble design: soldiers sent from one side of the world to the other to protect people they do not know and whose troubles do not interest them typically find themselves undermotivated. For Uruguayans in Congo, "everyone concerned" did not include the Congolese the peacekeepers were meant to protect.

The U.N.'s repeated peacekeeping failures this year the U.N. has been unable to prevent massacres in South Sudan and the Central African Republic prompted U.N. Secretary-General Ban Ki-moon to request a sweeping review of the organization's peacekeeping missions, which is ongoing, and Obama to call his summit in New York. But whereas the U.N. and the U.S. initiatives were designed to drum up more resources and in that they have been successful China's is aimed at refashioning the whole practice of legal international military action.

Since 2005, humanitarian military intervention has been officially governed by R2P. Supporters of R2P argue that there are universal standards of human rights every government and international governmental body is required to uphold. R2P formalizes that by obligating the international community to override any country's

sovereignty by intervening militarily imposing a no-fly zone, perhaps, or a blockade, bombing campaign or even a ground invasion if that country is unable or unwilling to stop human rights violations on its territory.

Critics, including the Chinese government, say the universalism to which R2P aspires is a mirage. They point out there are no commonly accepted standards of human rights even within countries, citing differing attitudes about the death penalty in neighboring American states. Better, say the critics, to respect a diversity of opinion. "No civilization is superior to others," said Xi in New York at the U.N. "Each civilization represents the unique vision and contribution of its people."

And in practice, argues China, R2P has been used to impose the views of powerful nations on others. It was used as justification for interventions that include NATO's attack on the forces of Muammar el-Qaddafi in Libya in 2011 and Russia's military actions in Georgia in 2008 and Ukraine in 2014. In this context, if U.N. peacekeeping played a role in this version of R2P, until now it has mostly been a subservient, ex post facto one, mopping up after the primary intervention by a major power, or a bellicose neighbor, is over.

China appears to be trying to reverse that. In New York, Xi made clear that China's object was to ensure that poorer, less powerful countries, especially African ones, were no longer subject to the whims of others but, instead, could reassert authority over their own affairs. The vehicle China has chosen for this pushback is peacekeeping and, in particular, China's funding of a permanent African Union international intervention force.

A model for that force already exists in the form of AMISOM, an African peacekeeping body in Somalia that practices a brand of peacekeeping very different from the U.N.'s. It is also more efficient: Even though it has 22,000 soldiers, more than MONUSCO, AMISOM costs a fraction

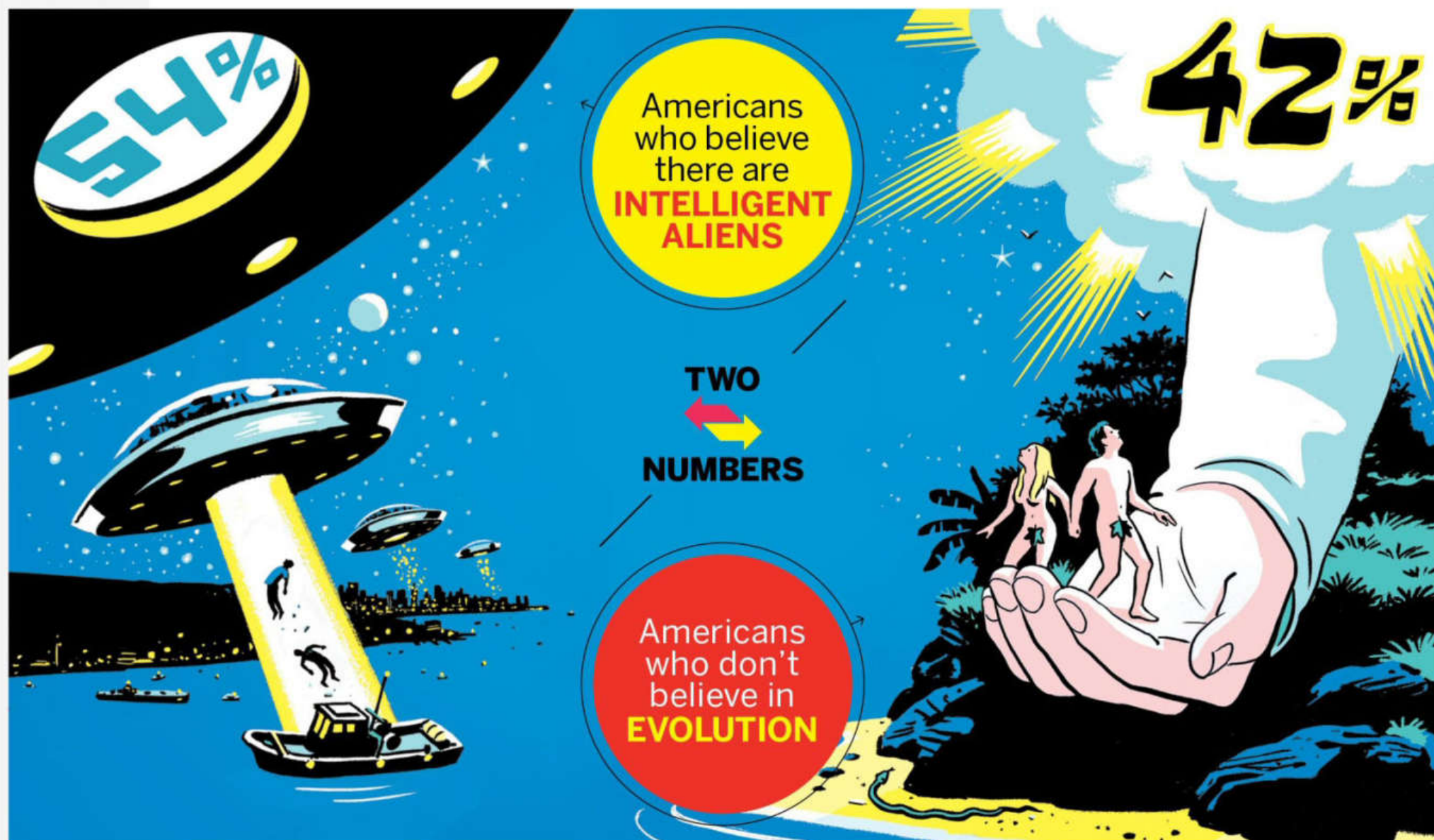
of a U.N. mission just \$95 million a year, less than a 10th of the annual MONUSCO price tag. And although it operates under a U.N. mandate, AMISOM's commanders mainly Ugandans, but also Burundians, Ethiopians, Kenyans, Djiboutians, Sierra Leoneans and Ghanaians interpret that authority much more aggressively. As the Ugandans in the Somali capital of Mogadishu candidly admit, they do not just try to keep the peace. Rather, they impose it by killing anyone making war, in particular fighters from the Al-Qaeda-allied Al-Shabab group.

AMISOM has been largely successful. Where the U.N. and the U.S. failed for two decades, AMISOM has killed thousands of Al-Shabab guerrillas and driven them out of Mogadishu. As a result, one of the world's most battered cities is experiencing an astonishing revival. Hundreds of millions of dollars have poured into real estate and other businesses, exports of livestock and fruit have soared, and the government predicts economic growth of 6 percent this year.

AMISOM's secret? Its readiness to bleed. Though it does not disclose casualties, the number of AMISOM soldiers killed in Somalia is estimated at 1,000 to 3,000. That level of casualties would be "totally unacceptable in a U.N. setting," says Doss. But since Uganda, Ethiopia, Kenya and Djibouti have all been attacked by Al-Shabab, all of these countries are prepared to pay that price. The same self-interest helps explain why, since most peacekeeping missions are in Africa, that continent now provides half of all peacekeepers in the world (or 60 percent if you include AMISOM).

Skeptics will worry that China's sudden conversion to peacekeeping especially if it's of the more aggressive AMISOM-style variety is little more than an exercise in soft power in a region where it has rapidly become a major player. Humanitarians will likely be concerned about the possible erosion of peacekeeping's traditional neutrality. But returning the responsibility to protect Africa to Africans

aligns with the mood of an Africa that is increasingly assertive and ever more tired of the U.N. After all, the new peacekeeping mission there can hardly do worse than the old one.



R. Kikuo Johnson

*TWO NUMBERS:
AMERICANS ARE
NEARLY AS LIKELY
TO BELIEVE IN
INTELLIGENT ALIENS
AS THEY ARE IN
EVOLUTION*

FIFTY-FOUR PERCENT OF AMERICANS BELIEVE THERE ARE INTELLIGENT ALIENS. FORTY-TWO PERCENT DON'T BELIEVE IN EVOLUTION.

Are we alone in the universe? Slightly more than half of Americans, 54 percent, don't think so. They believe in the existence of intelligent aliens, according to a poll conducted in mid-September by the market research and survey company [YouGov](#).

Meanwhile, 22 percent said they don't know if there are intelligent extraterrestrials, while only 24 percent think that such beings do not exist. On the other hand, many of those who don't believe in aliens certainly don't think we are "alone" in the cosmic sense; nearly two-thirds of these people explain their views by responding that "humans were created by a god or another higher being." (Most of the remaining alien nonbelievers—31 percent—chose the response that "the Earth is unique—it is the only place capable of sustaining intelligent life.")

At the same time, 42 percent of Americans think "God created humans in their present form 10,000 years ago," according to a [2014 Gallup poll](#). Just under one-third think humans have evolved, but with God guiding the process. Finally, 19 percent subscribe to a godless view of human evolution. Both the Gallup and YouGov polls surveyed 1,000 or more people, and have a margin of error of plus or minus 4 percentage points.

There certainly seems to be some overlap between religiosity and belief in aliens. Women tend to be more religious than men, polls and studies have [repeatedly found](#), and only 46 percent of them assert the existence of extraterrestrials, compared with 62 percent of men. People over 65 are also more likely to be religious and harbor a creationist viewpoint (50 percent) and are slightly less likely than those younger than them to believe in aliens (at 48 percent). Political background—which tends to align with religiosity—also seems to play a part. More than half of Republicans, who are more likely to profess

to being religious, say they don't believe in aliens or don't know if they exist. On the other hand, nearly two-thirds of Democrats think that extraterrestrial intelligence is real.

It may perhaps come as a surprise, then, that the biggest opponents of government funding for the search for extraterrestrial intelligence have been Democrats. Senator William Proxmire **ridiculed the idea** of looking for aliens when it was proposed by NASA in the early 1980s. Senator Richard Bryan of Nevada (**a lifelong Episcopalian**), also a Democrat, finally killed the NASA investment in SETI work in the early 1990s, telling *Cosmos* magazine that “the Great Martian Chase may finally come to an end. Millions have been spent and we have yet to bag a single little green fellow. Not a single Martian has said ‘take me to your leader.’” At the time, the amount funneled toward SETI work was only \$10 million annually, a tiny portion of NASA's \$14 billion or so budget.

Since then the SETI Institute has broken off from NASA; it is now run independently and **in serious need of further funding** to continue its pursuit of ET. It has gotten by with **investments** from Silicon Valley investors like Paul G. Allen, William Hewlett, David Packard and Nathan Myhrvold—many of whom are openly apolitical or nonreligious. Ultimately, of course, when it comes to finding aliens, the limiting factor isn't religiosity or politics per se, but cold hard cash—and the time we need to explore the universe.



Josef Sywenkyj/Redux

DID BIDEN SCREW UP IRAQ?

THE VEEP WAS THE POINT MAN FOR POLICY IN THE BIRTHPLACE OF ISIS, BUT IT'S HARD TO ASSIGN BLAME FOR THE DESERT DISASTER.

The debate over America's Iraq War legacy has already cropped up on the 2016 campaign trail, burning candidates like former Governor Jeb Bush. But that's just a taste of the fight that could flare up if President Barack Obama's point man on Iraq launches a run for the White House.

The president hadn't even been inaugurated when his vice presidential running mate, Joe Biden, touched down in Baghdad in January 2009. In a meeting with General Ray Odierno, commander of the Multi-National Force in Iraq, and U.S. Ambassador Ryan Crocker, Biden made clear what the hierarchy would be in the new Democratic administration. When it comes to Iraq, "I remember [Biden] saying, literally, 'I will always be the last guy in the room advising the president,'" recalls Ali Khedery, a political adviser to Crocker at the time. A second official who was there when Biden made the remark confirmed the account to Newsweek but declined to speak on the record.

At the time, the United States was buffeted by a debilitating financial crisis, one that would draw virtually all of the new president's attention. Yet Obama believed "Iraq needed high-level, sustained focus from the White House," he told a gathering of senior officials at a February 2009 meeting in the White House, according to Deputy Secretary of State Tony Blinken, then Biden's national security adviser. Turning to the vice president, a longtime chairman of the Senate Foreign Relations Committee who had been deeply engaged in the war, he declared, "Joe, I think you're the best person to do that."

In practice, that has meant Biden overseeing regular Cabinet meetings on Iraq, visiting Iraq eight times (all prior to 2012) and making innumerable phone calls to all the major Iraqi leaders. Ambassador James Jeffrey, who served as the U.S. envoy in Iraq between August 2010 and June 2012, tells Newsweek that Secretary of State Hillary Clinton, both secretaries of defense and the president's national security advisers "frequently dealt with me, and I dealt with them. But at the end of the day, the guy who would decide on most of the operational decisions was Biden."

Today, Iraq is a mess. The terrorist group ISIS operates across large swaths of the country after storming through northwest Iraq in 2014; while a lack of basic services like

electricity has prompted **rolling protests** by average Iraqis. Iraq's dramatic deterioration, after the country seemed to have been on the right path at the beginning of the decade, has prompted some partisan finger-pointing this year. Republicans have tried to pin the blame on Clinton, the Democrats' 2016 front-runner, who headed up the State Department between 2009 and 2013. Democrats, meanwhile, are blaming former President George W. Bush (and by extension, his brother, Jeb), as well as other Republicans who were cheerleaders for the 2003 invasion, which created the power vacuum in Iraq.

The scrutiny has yet to land on Biden, who is mulling a bid for the Democratic nomination in 2016, spurred on by Clinton's summer of stumbles. Yet were he to run, the vice president would be the one candidate who really owns Iraq policy, for good or for ill. As Robert Ford, the deputy ambassador at the Iraqi Embassy from 2008 to 2010, puts it, "The vice president has more than a little responsibility in all of this."

But in such a messy part of the world, can Biden really be blamed for the political and security failures that enabled the rise of ISIS? On this point, there is a fierce divide among senior Iraq hands. And the debate focuses, most intensively, on American actions over the course of 2010, when a contested parliamentary election in Iraq led to a nine-month political standoff.

Ultimately, the Iraqis formed a new government that returned incumbent Prime Minister Nouri al-Maliki, head of a religious Shiite party, to leadership, despite deep misgivings about his consolidation of military power and sectarian tendencies. As Ford recalls, during 2009 and 2010, "I was regularly sent in to talk to Maliki's chief of staff about people who had helped us against Al-Qaeda that Maliki's police forces...were holding without charges and were in some cases abusing."

Those concerns have been borne out. Since the United States withdrew its troops at the end of 2011, Maliki has gone after senior Sunni politicians on trumped-up charges, cracked down on Sunni protests, abandoned efforts to integrate Sunnis into the military and otherwise alienated this significant, if minority, ethnic group—the same one whose insurgency last decade led to some of the bloodiest years of the Iraq War. As retired General David Petraeus, the former U.S. commanding general in Iraq, testified in a Senate hearing last month: “The cause of Iraq’s unraveling” was the Maliki government’s “corrupt, sectarian and authoritarian behavior.” That “created the conditions for the Islamic State to reconstitute itself in Iraq, after which it gained additional strength in the Syrian civil war.”

There was a period of time in 2010, however, when it wasn’t clear Maliki would remain in power. In a major upset, Maliki’s State of Law party **won two fewer seats** than the secular Iraqiya party headed by another Shiite, Ayad Allawi, in the March vote. To critics, this was the turning point when the U.S. should have stepped in and helped Iraqis form a new government, sans Maliki. Khedery calls it “the most crucial period in this administration’s Iraq policy, because it was a historic moment where we could have gone down two paths, and some of us desperately tried to go down the correct path, the path that would have respected the Iraqi Constitution and the election results.” Everything that’s happened since is a direct outgrowth of U.S. leaders’ failure to act, Khedery and other critics say.

But defenders of the vice president say the United States didn’t have that kind of control over the situation. “The diplomacy in that period was as intense as anything I’ve seen,” Blinken says. “We were pressing not for any individual but for an outcome in Iraq that led to inclusive, nonsectarian government.... Ultimately, the people that emerged did not do justice” to that vision.

Maliki quickly lined up with another Shiite party in a coalition, which he claimed gave him the right to form a government, despite real questions around whether that comported with the Iraqi Constitution. A judge, widely considered to be in Maliki's pocket, ruled it did. But Maliki still didn't have enough support to claim a majority in parliament. So he, in effect, just sat there. On the American side, one former senior U.S. official tells Newsweek that Chris Hill, the U.S. ambassador through mid-2010, "decided early on that it should be Maliki." Hill and a handful of senior advisers in the embassy "went to the vice president and convinced Blinken and Biden" of that as well.

Blinken disputes that the U.S. "put our thumb on the scale." The reality was Maliki "had the most support." Allawi, he notes, was also "trying to see if he could garner the support to form a government" during the stalemate. "The bottom line is, he couldn't."

Beneath the dueling accounts lies a disagreement over the nature of Iraq's ethnic divisions, and just how rigid they really are. According to Emma Sky, Odierno's political adviser at the time, Biden's "perception was that it's all about ancient hatred" between Sunnis, Shiites and Kurds, she says, ignoring Iraq's multiethnic history. Pointing to [a 2010 poll](#) commissioned by the National Democratic Institute, an American nonprofit, Sky notes that Iraqis actually were expressing a strong desire to move beyond sectarian politics. "'No to religious parties,' that was the mood at the time."

Sky's outlook on the election, shared by Ford, Khedery and several foreign ambassadors and military officials, clashed directly with that of other American diplomats, including Ambassadors Hill and then Jeffrey. Hill, now at the University of Denver, did not respond to Newsweek requests to comment. But in his [2014 memoir](#), he wrote, "I concluded we needed to focus on a better Maliki than he had been in his first four-year term, rather than engage in

a quixotic effort to try and oust him.” Hill took a dim view of Allawi, believing that despite being Shiite, he could not win the support of his fellow Shiites (roughly 60 percent of Iraq’s population), given that Allawi’s party was majority Sunni.

Says Jeffrey, who succeeded Hill in 2010: “Whether we like it or not, you had a Lebanon-like system emerge from Iraq by the fall of 2004...where all the religious ethnic groups ran as blocs.

“The obvious way to divide up the goodies was a Kurdish president, a Shiite prime minister from the religious Shiite parties and a Sunni speaker of Parliament,” he continues, “and that’s how it’s been ever since.” Jeffrey says the American policymakers entertained the idea of helping negotiate a political deal to put another religious Shiite at the country’s helm, but couldn’t find anyone that the various factions—Shiite, Sunni and Kurd—would rally around.

Had the U.S. tried such a tact earlier, however, it may have been more successful, suggests one foreign diplomat in Baghdad at the time. As Maliki struggled to gather support during the early summer months, “I remember having conversations with senior American officials” that “this was the moment we should pick somebody else.” The situation was still very fluid, and the thinking was other Shiites would go along with such an arrangement, based on a general distaste for Maliki. In the end, “we don’t know, because we never tested it,” he says. Critics also point out that Maliki came from virtual obscurity to emerge as prime minister in 2006. The potential leadership ranks didn’t need to be limited to just a handful of well-known men.

By the end of summer, however, alliances were hardening, and the clock was ticking. The message coming from Washington, Hill recounted in his memoir, was one of deep anxiety about the impending 2011 deadline for American troops to leave Iraq, under a deal that had been negotiated by President Bush. The U.S. military and the

Obama administration were keen to keep a smaller force in the country past 2011, but “we needed somebody to negotiate with, we needed a parliament, and we didn’t have either,” Jeffrey recalls. “And so Biden, I, the president and everybody involved decided that if the Iraqis...couldn’t find another prime minister, then it was Maliki or nobody.”

Proving this sort of counterfactual argument—if the United States had pressured Maliki out of government in 2010, then there would be no ISIS today—is virtually impossible. We don’t know, as Biden’s defenders point out, whether another Shiite leader would have governed similarly to Maliki, fueling Sunni angst. Iraq, it’s safe to say, is not exactly teeming with statesmen these days. Political campaigns, however, have never let a lack of hard evidence hamper their attacks.

As Maliki’s second term unfolded and tensions began building, “the vice president spent endless hours and time trying to prevail on the leadership, starting with the prime minister, to govern...in a truly inclusive manner,” says Blinken. Ultimately, it didn’t happen; in fact, it may have already been futile. It certainly doesn’t help Biden’s case that even before 2010, there were a range of voices—foreign policy experts, not partisans—warning Washington about Maliki, predicting many of the things that have come to pass in Iraq. In a 2016 political campaign where concerns about ISIS loom large, that’s a problem.



Alex Gallardo/Reuters

PARALYZED MAN WALKS AGAIN, USING ONLY HIS MIND

SCIENTISTS DESIGNED A BRAIN-COMPUTER INTERFACE THAT ENABLED THE PATIENT TO SEND INSTRUCTIONS DIRECTLY TO HIS LEGS.

It's a technology that sounds lifted from the latest Marvel movie—a brain-computer interface functional electrical stimulation (BCI-FES) system that enables paralyzed users to walk again. But thanks to neurologists, biomedical engineers and other scientists at the University of California,

Irvine, it's very much a reality, though admittedly with only one successful test subject so far.

The team, led by Zoran Nenadic and An H. Do, built a device that translates brain waves into electrical signals that can bypass the damaged region of a paraplegic's spine and go directly to the muscles, stimulating them to move. To test it, they recruited 28-year-old Adam Fritz, who had lost the use of his legs five years earlier in a motorcycle accident.

Fritz first had to learn how exactly he'd been telling his legs to move for all those years before his accident. The research team fitted him with an electroencephalogram (EEG) cap that read his brain waves as he visualized moving an avatar in a virtual reality environment. After hours training on the video game, he eventually figured out how to signal "walk."

The next step was to transfer that newfound skill to his legs. The scientists wired up the EEG device so that it would send electrical signals to the muscles in Fritz's leg. And then, along with physical therapy to strengthen his legs, he would practice walking—his legs suspended a few inches off the ground—using only his brain (and, of course, the device). On his 20th visit, Fritz was finally able to walk using a harness that supported his body weight and prevented him from falling. After a little more practice, he walked using just the BCI-FES system. After 30 trials run over a period of 19 weeks, he could successfully walk through a 12-foot-long course.



In the virtual world Fritz is able to "walk." Credit: Journal of NeuroEngineering and Rehabilitation

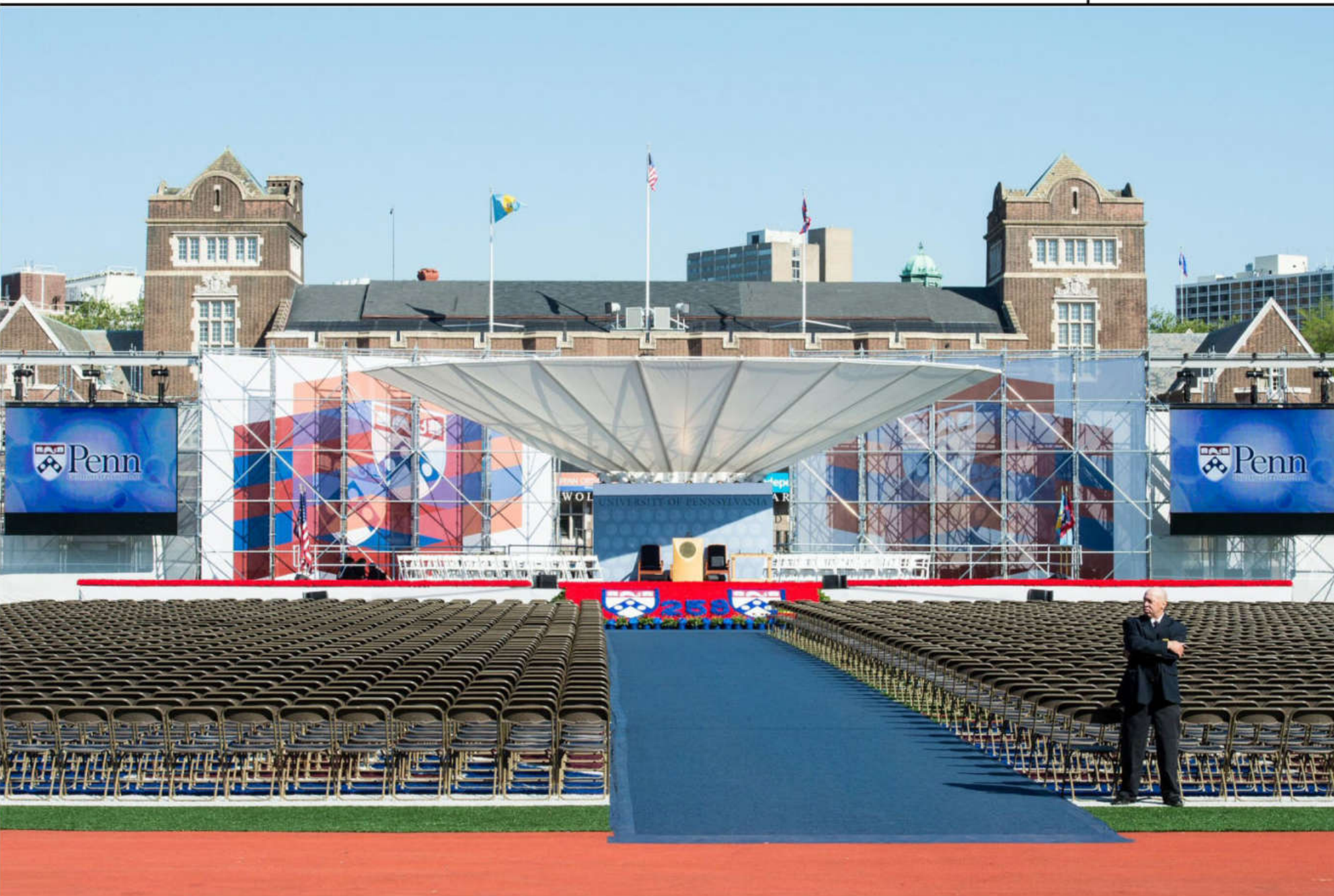
As encouraging as the trial sounds, there are experts who suggest the design has limitations. “It appears that the brain EEG signal only contributed a walk or stop command,” says Dr. Chet Moritz, an associate professor of rehab medicine, physiology and biophysics at the University of Washington. “This binary signal could easily be provided by the user using a sip-puff straw, eye-blink device or many other more reliable means of communicating a simple ‘switch.’”

Moritz believes it’s unlikely that an EEG alone would be reliable enough to extract any more specific input from the brain while the test subject is walking. In other words, it might not be able to do much more beyond beginning and ending a simple motion like moving your legs forward—not so helpful in stepping over curbs or turning a corner in a hallway.

The UC Irvine team hopes to improve the capability of its technology. A simplified version of the system has the potential to work as a means of noninvasive rehabilitation

for a wide range of paralytic conditions, from less severe spinal cord injuries to stroke and multiple sclerosis.

"Once we've confirmed the usability of this noninvasive system, we can look into invasive means, such as brain implants," said Nenadic in a statement announcing the project's success. "We hope that an implant could achieve an even greater level of prosthesis control because brain waves are recorded with higher quality. In addition, such an implant could deliver sensation back to the brain, enabling the user to feel their legs.



Gilbert Carrasquillo/Getty

CHEAPER AND SMARTER: BLOWING UP COLLEGE WITH NANODEGREES

**THE WEB IS GOING TO CHANGE EDUCATION BY
UNBUNDLING COLLEGE WITH NANODEGREES.**

For more than a decade, we've been expecting the Internet to blow up universities. But last time anyone looked, colleges are still **raising** their tuition costs and getting record numbers of applications. Online courses have so far

been about as disruptive to college as tofurkey has been to Thanksgiving.

But now a company called **Udacity**, partnering with Google, shows us that we've been focused on the wrong disruption. The big change won't be the digitization of college—it will be the unbundling of the college degree into discrete, focused chunks, which Udacity calls nanodegrees. In other words, technology will assault the college degree, not the experience of college, and that will make all the difference.

In fact, if you play this development forward a decade, it likely means that an expensive B.A. or B.S. won't be necessary for a good career. A lot of people will do really well by skipping college and assembling a collection of nanodegrees throughout their lives.

The nanodegree got its start earlier this year. Innovations often begin with a **problem** to be solved. Google was wrestling with a severe shortage of people who knew how to develop apps for Android phones. Somehow, Google needed to get more Android developers trained and working. Google asked for help from Sebastian Thrun, a former Stanford professor who used to run Google X labs and now is CEO of Udacity.

Thrun founded Udacity in 2011 to offer massive open online courses (MOOCs), which are online versions of traditional college courses. For Udacity and just about every other MOOC company, that business, to be blunt, has sucked. There are probably tons of reasons why MOOCs **haven't disrupted** college and lured the masses, but here's the main one: You can't take Stanford-level MOOCs and come away with a degree that carries Stanford-level weight in the job market. While MOOCs are cheaper and more accessible than college, they confer few of the benefits of college—not the degree, the social networks, the football games or the throwing up at frat parties. So why bother?

To solve Google's problem, though, Udacity began offering something completely different from college. A Udacity nanodegree program might cost a thousand bucks and take a few months to complete. It's focused on a specific subject, like Android coding. At the end, you can take your nanodegree to Google job interviews, and the company will recognize its value and perhaps hire you.

At the end of September, the nanodegree moved another step forward. Udacity will offer the program in India and is adding Indian giant Tata as a partner. So now Tata, a huge, respected conglomerate of businesses ranging from cars to chemicals, will recognize Udacity nanodegrees when hiring.

You can see the path opening for other companies to embrace nanodegrees. Companies around the world find a shortage of coders, and they can't expect a giant new batch to suddenly burst out of traditional four-year schools. If Udacity's nanodegree-holding graduates prove capable in the workplace, employers will increasingly trust the value of a nanodegree. Before long, a nanodegree will become an accepted thing in technical circles.

But the concept does not have to be stuck in coding. Why not separate out any focused area of knowledge and create a nanodegree? A B.A. or B.S. from a college represents a bundle of courses taken and passed, supposedly representing a well-rounded education. But maybe the bundle isn't all that helpful—the French lit course isn't helping in your marketing job. And as you go through life, you might need knowledge that wasn't in your original bundle. Sooner or later, Udacity or some entity is going to offer nanodegrees in all sorts of subjects: accounting, writing, ancient Greek history.

This kind of higher education seems to fit better with the modern age. "It's a mistake to think that a single college education can carry you for a lifetime," Thrun **told** The New York Times. "To keep pace with change, your education has to be done throughout your life." Technology keeps

driving faster change, affecting all industries. Just look how Airbnb is changing hospitality, or Zenefits is changing human resources. What you learned five years ago might not be worth a bowl of chili today.

A lot of people are developing overlapping, free-agent **micro-careers**, each needing a different skill set: freelance designer by day, Etsy seller at night, DJ on weekends. It must follow that a good way to advance micro-careers would be with nanodegrees.

Of course, there are lots of really good arguments for the whole, bundled college experience. For four years you grow up, learn how to think, get exposed to a lot of stuff and party your ass off. Maybe that will always be important to a certain slice of society. But the cool thing about nanodegree programs is that they're not trying to be another version of college—they're different from college. If employers accept nanodegrees, they will become a path to a full and successful life without the expense and time commitment of college.

Technology tends to **unbundle** stuff. Look how it's unbundling television, or how it unbundled the music album. The college degree is a bundle that doesn't work for everybody and creates unnatural market conditions, which is why college costs consistently rise faster than inflation. The next generation will be able to pull apart the college bundle the way people today are pulling the plug on cable.

They'll just have to learn how to puke at parties on their own.



Justin Sullivan/Getty

FIGHTING WEST NILE VIRUS SHOULDN'T MEAN POISONING PEOPLE

**CITIES AROUND THE COUNTRY ARE SPRAYING
PESTICIDES MEANT TO KILL MOSQUITOS THAT DON'T
WORK—AND COULD POSE A SERIOUS HEALTH THREAT.**

On September 21, at around 9 p.m., Keegan Stephan was biking home through the Sunnyside neighborhood of Queens, New York, when he decided to stop at a Mexican

food truck to grab a quick dinner. As he waited in line with about five other customers, a police car crept by, warning pedestrians through a loudspeaker to get indoors immediately because pesticides for West Nile virus control were being administered. A truck trailed behind the police, spraying a fine mist into the air.

Local governments are supposed to give residents ample warning that pesticides will be sprayed in their area. A spokesman from the New York City Department of Health and Mental Hygiene tells Newsweek, “Our team does not spray in the presence of residents.” Yet as his food was being prepared, Stephan watched a thick cloud of pesticides waft up and then land on him and his fellow customers. “They sprayed people and food in the open air,” he says. “They literally gave us seconds to go anywhere because the truck was right behind the cop car.”

West Nile is usually transmitted to humans when an infected mosquito bites them. In rare cases, it can lead to serious neurological illnesses, such as encephalitis. However, according to the Mayo Clinic, **fewer than 1 percent** of people who are infected become severely ill. About 70 to 80 percent of people infected will never **display symptoms**, and many others experience only mild flu-like symptoms. In addition, the average person’s risk of contracting West Nile is extremely low; even in areas where the virus is present, only a very small **number** of mosquitoes carry the virus. In 2015 (as of September 29), there have been **just 17 reported** cases of West Nile in the state of New York and one death out of a population of about 20 million people. Nationally, there have been 1,028 cases and 54 deaths out of more than 320 million people.

Sprayings, on the other hand, are very common; the NYC health department **sprayed** neighborhoods across the city 22 times from June through September this year, and New York is just one of many places in the U.S. where pesticides are sprayed widely. Across the country, from counties

all over California to Chicago and Dallas, communities and residential areas are being sprayed with an array of pesticides for mosquito control.

Public health agencies insist the sprayings are effective and an overall public health good: “Mosquito [pesticides] have been shown to be effective in reducing mosquito populations, the number of [West Nile virus] positive mosquito pools and preventing human cases of [the] disease, which provides a net economic benefit,” a health department spokesman says in an email to Newsweek.

However, it’s not clear how effective these efforts are in stymying West Nile. Most cities and counties use what is known as “ultra-low-volume spraying,” which sprays a fine mist of pesticides from trucks or planes. According to a **report** by Cornell University professor emeritus of ecology and evolutionary biology David Pimentel, the average mosquito kill rate when this method is used is only 21 to 45 percent. Research also shows that many pesticides end up killing or harming a lot of other species, including some that help to keep mosquito populations in check: **birds**, **dragonflies** and **bats**, for example. There’s also the **well-documented** problem of mosquitoes developing a resistance to commonly used pesticides.

Then there’s the much larger issue of human safety. The pesticides typically used are organophosphates, carbamates or pyrethroids—and they are likely **endocrine-disrupting chemicals** (EDCs), which are known to interfere with or disturb our natural hormonal systems. Government officials say the health risk posed by these chemicals, when used in mosquito sprayings, is minimal since people are being exposed to only low doses. For example, the NYC health department **website** says, “For these sprayings, the Health Department will use a very low concentration of Anvil 10+10, a synthetic pesticide. When properly used, this product poses no significant risks to human health.” The department, along with health agencies in cities such as

Chicago and Dallas, points to prior regulatory consent for the chemicals it sprays, citing Environmental Protection Agency (EPA) approval and Centers for Disease Control and Prevention (CDC) mosquito control guidelines.

But researchers who study pesticides say the assessment protocols that the EPA uses to determine whether a chemical is safe are fundamentally flawed. The major assumption used in these safety assessments is that if you expose animals to high doses of a certain chemical, you can extrapolate any effects that you see to smaller doses but eventually land on a dose where the exposure is so low that there are no harmful effects, says Laura Vandenberg, assistant professor of environmental health science at the University of Massachusetts, Amherst. But, she says, there is “a large amount of literature on endocrine disruptors challenges this practice.”

The way EDCs and many other chemicals are currently evaluated for safety is based on the principle of “the dose makes the poison.” Bruce Blumberg, professor of pharmaceutical sciences and developmental and cell biology at University of California, Irvine, says, “This idea that there’s some threshold beneath which any given chemical is harmless is probably not true.”

What’s more, Andrea Gore, a professor of pharmacology at the University of Texas at Austin, says the EPA does not test at low doses and “virtually never” looks at effects of exposure during child development. “We know that vulnerability during development is so much higher that you really do need to look at fetal exposure,” she says.



Swampy areas near overhead power lines northwest of Chicago are visible in areas designated for spraying to control mosquito populations potentially carrying the West Nile virus. Credit: M. Spencer Green/AP

The unborn children of pregnant women, babies and children are at heightened risk since many common pesticides are more harmful at crucial windows of development. A major 2014 **study** found that women who were exposed to pyrethroid pesticides (the pesticide sprayed in New York City this summer was sumithrin, a

pyrethroid) both before conception and in the third trimester of pregnancy had increased odds of their child displaying autistic spectrum disorders and developmental delay. It also found that pregnant women in their second and third trimesters exposed to organophosphate pesticides—like chlorpyrifos, which is often **used** in mosquito sprayings—had an increased risk of having a baby with autistic spectrum disorder.

In fact, the EPA has banned chlorpyrifos from residential use and **is considering banning** it in agricultural contexts as well. In Gore's laboratory model, she **found** that exposure to chlorpyrifos resulted in impaired reproductive function and infertility. It's also a known neurotoxin and has been **implicated** in mental development delays and attention problems in children.

In a **1998 study** done at Mount Sinai School of Medicine, researchers found that sumithrin demonstrated significant estrogenic activity at relatively high doses and “may contribute to reproductive dysfunction, developmental impairment, and cancer.” But that doesn't mean low-dose exposure doesn't matter. Vandenberg, who was not involved in that study, says since sumithrin is not water soluble, it can persist in the fat cells in our bodies, meaning that it can build up in our tissues with repeated exposure. In a 2006 **review** of the literature on pesticides, researchers found that over time, exposure “may be associated with menstrual cycle disturbances, reduced fertility, prolonged time-to-pregnancy, spontaneous abortion, stillbirths, and developmental defects.”

The NYC health department says its workers “have been adulticiding and larvaciding since 1999 and have had no reported illnesses associated with our efforts.” But studies that evaluate the health effects of EDCs look for subtle and long-term changes, like the loss of fertility months after exposure, abnormal social behaviors or disruption to brain development, Vandenberg says. These effects often

don't appear until months, years or even decades later. For example, animal and cell studies of the now-banned pesticide DDT predicted increased risk for breast cancer. But it took more than 50 years to complete a **study** that found exposure in the womb to DDT was associated with increased breast cancer rates in women.

"This is the question of risk-benefit analysis," says Gore. "What's the balance of one or two people dying from West Nile versus 100,000 people, or half a million people in Brooklyn being exposed to low levels of a chemical that may or may not cause endocrine disruption in their body? How do you do the formula? What's the calculation?"

The NYC health department sent Newsweek a multitude of studies that found human health risk from pesticide exposure was minimal. For example, the department cites a **2004 study** that found spraying for West Nile virus in New York City did not result in increased visits to the emergency room for asthma. But this speaks to acute exposure, not low-dose exposure or long-term effects. It also cites a **CDC report** looking at pesticide exposure in Mississippi, North Carolina and Virginia in 2002 and 2003 that found that pesticide metabolites in urine did not increase significantly in residents who lived in areas that were sprayed. But that CDC report also pointed out that "occupational studies suggest that excessive exposure to these pesticides can cause serious health effects."

The NYC health department also cites a **2008 study** assessing human pesticide exposure in Florida in 2004 and a **2010 study** undertaken in Sacramento County, California, both of which found the risk from West Nile to outweigh the risk associated with pesticide exposure. Those studies, however, appeared in the Journal of the American Mosquito Control Association, an organization that represents **corporations** that manufacture pesticides for mosquito control, including, Clarke, which has a contract

with New York City, as well as Orange County, California, and many other local governments.

On Friday, September 11, 2014, Prospect Park in Brooklyn, New York, was filled with people: children with parents, nannies with babies, pregnant women with toddlers in tow. In the early dawn of the previous day, the health department sprayed the park and surrounding neighborhoods with pesticides. Yet no signs to alert residents of the spraying were present. Several moms with small children in the park said they had no idea the park had been sprayed. The city posted notices on lampposts outside the park the day before the spraying, but they were removed by the following afternoon.

The active ingredient in the pesticide used by the NYC health department, according to a spokesman “generally breaks down quickly in sunlight and water and does not leave a toxic residue. Therefore, no special precautions or waiting periods are recommended for outdoor activities after the treatment.” However, according to the manufacturer’s **label**, while the chemical mix does degrade after nine to 14 hours in sunlight, it can also remain in the soil for 18 to 26 days after application.

There are viable and safer alternatives to indiscriminately spraying for adult mosquitoes; these include placing mosquito fish, which feed on the insects’ larvae, in bodies of water where they breed, as well as introducing or supporting the proliferation of other natural predators of mosquitoes. There are also bacterial agents that can be used to kill mosquito larvae, which appear to be far less detrimental to human health and the environment—and more effective—than spraying pesticides.

“The fundamental problem here is if you want to kill pests, the chemicals that kill them have some amount of toxicity for humans, no matter what the manufacturer tells you,” Blumberg says. “And they’ll say it’s safe based on

this idea that ‘dose makes the poison’—but a lot of these chemicals have unexpected effects.”



Ton van Vliet/Hollandse Hoogte/Redux

*MARK LOMBARDI'S
ART WAS FULL OF
CONSPIRACIES—
NOW HIS DEATH HAS
BECOME ONE*

**HE MADE DRAWINGS THAT LINKED THE SECRET FLOW
OF CAPITAL; HE MAY HAVE PAID FOR HIS ART WITH HIS
LIFE.**

The three-story redbrick building at 435 South Fifth Street in Williamsburg, Brooklyn, is on the ragged edge of what **New York magazine in 1992 called “the new bohemia,”** a waterfront warehouse district primed to receive the artists priced out of Manhattan. The conceptual artist Mark Lombardi arrived in the city’s newest, coolest art district about five years after that memorable designation, eventually settling in the neighborhood’s Dominican section. He was coming from decidedly un-bohemian Houston, where he had worked for the Contemporary Arts Museum Houston, started galleries and tried to publish books of investigative journalism before turning to conceptual art, where he had found late, improbable success. He was approaching 50, making him more than twice the age of many of the painters, gallerists and performance artists starting to crowd into the Polish taverns on Bedford Avenue, dreaming of fawning spreads in Artforum.

A visitor to Lombardi’s studio would not have seen the usual evidence of the fine arts, because Lombardi was not an artist in the manner of Michelangelo or Georgia O’Keeffe. He was less interested in the creation than the idea behind that creation, echoing the cerebral ethos of conceptualism. The movement had been defined in 1967 by the painter Sol LeWitt, who declared, “The idea itself, even if it is not made visual, is as much of a work of art as any finished product.”

The concept that fed Lombardi’s conceptualism was that a clandestine economy, bound by no law, shuttled money between concerns in Texas, the Middle East, the Vatican and the Beltway. That money translated into oil barrels, or bundles of cocaine, or crates of arms, and inevitably manifested itself as ruthless power of the few over the many. Lombardi thought the best way to defeat this corrupt global cabal was to show it its own reflection. As journalist Patricia Goldstone writes in **Interlock: Art, Conspiracy, and the Shadow Worlds of Mark Lombardi**, the first major book about the artist, his work was “a continual visual history of

the world's shadow banking system" and "the evolution of a shadow, worldwide web of private intelligence and military firms." No haystacks or wheat fields for this artist; no rainy Paris boulevards.

Lombardi's "narrative structures," as he called them, were based on information he culled from public documents, and while there is a sort of mad beauty to the crisscrossing arrows of his drawings, their main currency is not beauty but information, the feverish connections between the Saudis and the Bushes, between the millions shuttled from London to Riyadh and a brutally suppressed peasant uprising Latin America. He was like an investigative reporter whose medium just happened to be the schematic drawing.

After many years of disappointment and obscurity, Lombardi caught the public's eye in the late 1990s, with shows in Houston and then New York. The New York Times **praised his "beautiful" drawings for their ability to "suggest an evil order underlying apparent chaos,"** comparing him in that regard to postmodern novelist Thomas Pynchon. In 2000, he took part in a group exhibition at PS1, in Queens; meanwhile, the Whitney Museum of American Art was planning to buy one of his major drawings. He was becoming, as Joe Biden might say, "a big fucking deal."

For reasons Goldstone does not sufficiently elucidate, Lombardi became unhinged as spring approached. Yes, he was divorced and in debt, but these were chronic concerns, which artistic fame could easily alleviate. An accident with an errant sprinkler pipe damaged a drawing called BCCI - ICIC & FAB (**a version of which the Whitney would eventually acquire**). The apogee of his artistic and investigative efforts, the drawing focused on the operations of the Bank of Credit and Commerce International, a rogue institution straight out of a John le Carré novel. Reconstructing BCCI over the course of four sleepless days

may have, Goldstone speculates, “unhinged the artist” for good. But this is only conjecture.

Whatever the case, friends remember Lombardi as “really on edge,” haunted and paranoid in the final weeks of his life. On March 22, he was expected at the opening of the Whitney Biennial in Manhattan but never showed. Friends became worried and called the police. An officer from the 90th Precinct, which is across the street from Lombardi’s studio, found him in his apartment, hanging from a sprinkler pipe. Next to him was a bottle of champagne.

That he was not much of a champagne drinker is only one of several inconsistencies about Lombardi’s death. The bigger one is that while he may indeed have suffered from a psychiatric disorder, he was on the cusp of great professional success and thus unlikely to seek a permanent way out. That’s why some have never been convinced that Lombardi committed suicide. “You’re never going to come up with a good reason for him killing himself,” the gallerist Deven Golden, who showed Lombardi’s work, told Goldstone.

Goldstone is clearly attracted to this line of thinking, despite no evidence of Lombardi having been killed by one of the many powerful and/or dangerous men who figured in his work. True, it would make for a better story, but the story is pretty compelling as is. For example, Goldstone notes that “the FBI was fully aware of Lombardi’s art” and that its agents came to the Whitney after 9/11, demanding to see his BCCI drawing. “Nameless security officials,” Goldstone writes, also closed down a posthumous show of Lombardi’s works at the Drawing Center, a well-regarded lower Manhattan institution, on opening night.

The Wall Street Journal, which is not generally known for trafficking in lefty conspiracy theory, **noted in 2002 that Lombardi’s drawings “suddenly have a role in the global war on terrorism,”** singling out their “impressive” scope, from the Saudi banker and Osama bin Laden associate Khalid bin Mahfouz to Arkansas tycoon and Clinton friend

Jackson T. Stephens. His drawings, the Journal said, featured “some of the shadiest and most familiar individuals in finance and politics worldwide.” It is entirely possible that Lombardi went one provocation too far.

However he died, Lombardi had achieved the dream not only of artists but of conspiracy theorists: He had gained attention from the powers that be.



Lawyer Gerry Spence, Saudi arms dealer Adnan Khashoggi and former First Lady of the Philippines Imelda Marcos posed for a photo on July 2, 1990 at the Nile Restaurant in New York City. Khashoggi was a central figure in Lombardi's piece, "Oliver North, Lake Resources of Panama, and the Iran-Contra Operation," which looked at the connections surrounding the Iran-Contra scandal. Credit: Ron Galella/WireImage/Getty

Mark Lombardi was born in 1951, in Syracuse, New York. He was 12 when John F. Kennedy was assassinated, and, as Goldstone tells it, the bloodshed of Dealey Plaza in Dallas would forever haunt him, giving his worldview an ominous cast.

Lombardi went to Syracuse University in 1971 to study art, only to discover, as Goldstone writes, that he "lacked the ability to draw." That might end most artistic aspirations, but it did not end Lombardi's. He was a devoted disciple of James Harithas, then a professor at Syracuse and head of the Everson Museum of Art, an unabashed left-wing provocateur. A show organized by the Everson, "From Teapot Dome to Watergate," had a profound effect on Lombardi, aligning him with the explicitly political, often didactic sensibility that was to mark his work.

After college, Lombardi followed Harithas, who had been hired by the Contemporary Arts Museum Houston and was in the midst of creating there what Goldstone calls an "anarchic spirit" at odds with the conservative image of Texas. She paints an unflattering picture of the erstwhile Lone Star Republic as a "parallel state" drunk on oil money and uninterested in political scruples. Clearly sympathetic to the conspiratorial mindset, Goldstone aligns what she calls the Texas Raj with the German-Jewish bankers of Manhattan and the military-industrial complex tumescing in the Beltway. Goldstone can, sometimes, seem to tease out the kinds of connection between power and capital that animated Lombardi's art, as well as the novels of Pynchon and Don DeLillo. She can also, however, seem only a step away from the graying hippie passing out leaflets about the New World Order and the gold standard.

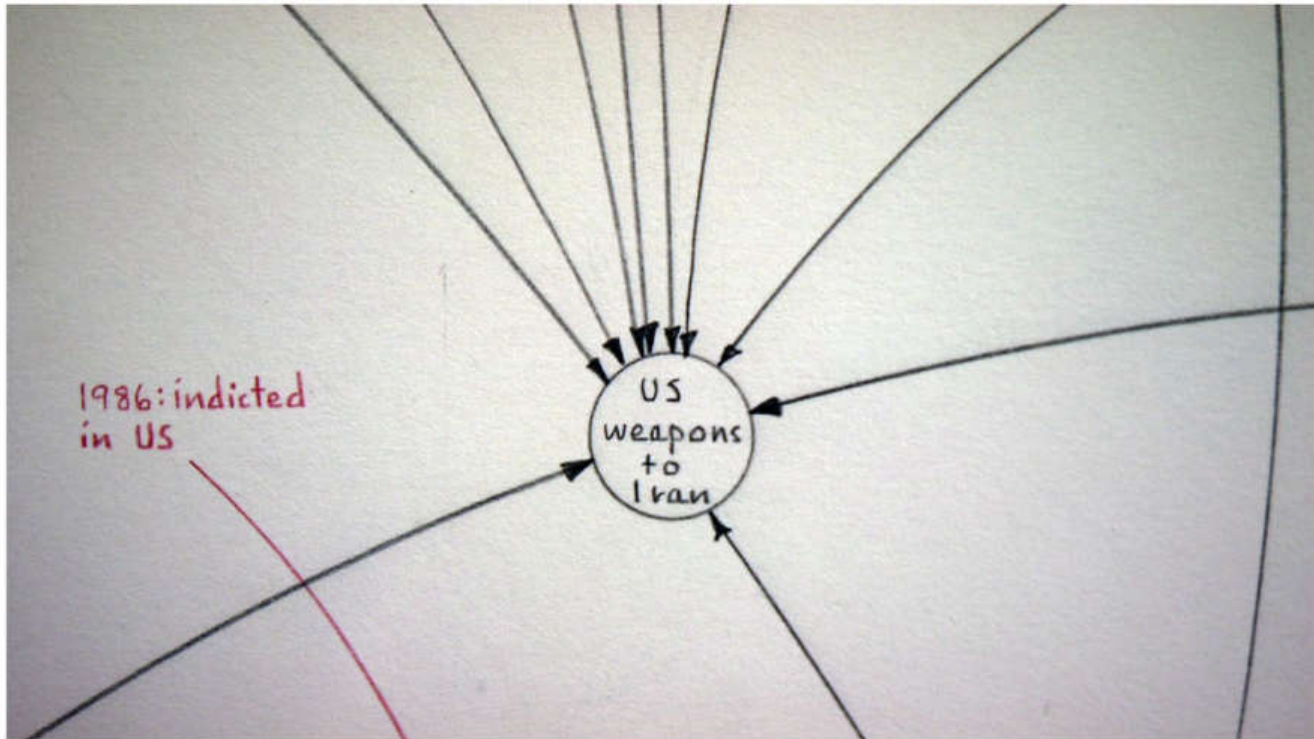
By the late 1980s, after about a decade in the "boys' club of badly behaved boys" of Houston, as Goldstone calls it, Lombardi abandoned any hopes of becoming a painter. He started two art galleries, but he was as inept an entrepreneur as he had been a draftsman. Without many prospects, he drifted toward the deadly seas of middle age.

His breakthrough came in 1987, as he was talking on the phone with Leonard L. Gumport, a lawyer in Los Angeles. (Lombardi would later put the conversation in 1993, but Gumport stands by the earlier date.) Lombardi wanted

to know about the arms dealer Adnan Khashoggi, whose financial entanglements Gumpert was trying to unravel. As they delved into the complex matter, Gumpert suggested that Lombardi draw an explicatory interlock, “a type of flowchart used in antitrust litigation and accounting that involves graphing the relations between interlocking boards of directors,” in Goldstone’s words.

Lombardi tried to publish a book on Khashoggi but failed. Yet he somehow grasped that the drawings that formed the backbone of his research were, themselves, a form of art. So he kept drawing, subsisting, as Goldstone puts it, on “alcohol and overextended credit” while allowing his marriage to dissolve. In 1996, Paul Schimmel, a former classmate from Syracuse who now headed the Los Angeles Museum of Contemporary Art, came to Houston to judge an arts competition. He was especially astounded by a drawing called Neil Bush, Silverado, MDC, Walters & Good, which was submitted anonymously. “When I saw this obsessive-compulsive chart, filled with facts and paranoid fantasy—there was nothing like it,” Schimmel said. He chose the drawing as the winner.

Mark Lombardi had what Goldstone calls “his first big recognition.” He was approaching 50.



A detail from one of Lombardi's works as shown in Mareike Wegener's film, "Mark Lombardi—Kunst und Konspiration." Credit: Mareike Wegener/Real Fiction Filme

Conceptual art is not beautiful. It is like a culinary movement that declares a war against flavor, yet nevertheless demands that you taste its creations. One famous conceptualist work by Hans Haacke, **Shapolsky et al. Manhattan Real Estate Holdings, A Real Time Social System as of May 1, 1971**, essentially traces the New York properties of a single slumlord through charts, maps and photographs. The work isn't pretty, nor wants to be, but it does convey a message as earnest and profound as that of any fresco in Venice.

Lombardi's first exhibition, in the fall of 1996, had 26 works, with titles like Charles Keating, ACC, and Lincoln Savings and Banca Nazionale del Lavoro, Reagan, Bush, Thatcher, and the Arming of Iraq. Though he collected information on thousands of note cards, the drawings were presented without explicatory legends or commentary, even if the artist's political leanings were obvious. You were supposed to be awed by the information, the astounding connections that all could see but few could trace.

That winter, when the Drawing Center in New York asked him to partake in a group show, Lombardi decided

that he'd move to New York. He had, as he said, "one continual drawing in my head," and his existence in Brooklyn was devoted to translating that image into works of art. In his free time, he indulged in the chasing of women and the consumption of intoxicants. He made a business card that proclaimed "Death-Defying Acts of Art and Conspiracy." (That became the title of a posthumous German documentary about his work [shown at the Brooklyn Film Festival](#).)

Goldstone argues that he was "the first artist to do metadata," the kind of visualization that, today, is a commonplace means of understanding the world: masses of numbers made into attractive, coherent pictures by data ninjas with Stanford degrees. Lombardi did it all without the Internet, which he apparently disdained. He stored his information on note cards, of which there were some 14,000 at the time of his death.

Today, there are 20 of his drawings in the collection of the Museum of Modern Art, according to the Manhattan museum's online archive of his work. Goldstone says that the prominent Gagosian Gallery recently had one of his drawings on sale for \$450,000. Harithas, his mentor, calls Lombardi "the first great artist of the 21st century," an astounding claim about someone who found his medium only in the last years of his life.

"Lombardi is more than a conceptualist or political artist," [argued Jerry Saltz of The Village Voice after Lombardi's death](#). "He's a sorcerer whose drawings are crypto-mystical talismans or visual exorcisms meant to immobilize enemies, tap secret knowledge, summon power and expose demons." But demons dislike exposure. One way or another, they will take their toll.



Michael Ochs Archives/Getty

INSIDE 'THE ROCKY HORROR SHOW' CREATOR'S TIME WARP

**RICHARD O'BRIEN ON WHY THE 1973 GLAM-ROCK
MUSICAL IS STILL GOING STRONG.**

Richard O'Brien is sitting at his regular corner table in London's Covent Garden Hotel. With his shaven head and gaunt features, O'Brien has barely changed since he first starred in *The Rocky Horror Show*, a musical about an unstable transvestite scientist that he wrote in the early

1970s when he was an unknown actor. Nor has O'Brien's dress sense altered much since the early '70s: He is wearing a black thigh-length cashmere wrap with a belt tied in a bow, a matching pair of what he says are leggings and cowboy boots. When I first saw him, I thought of Gene Wilder's line from Mel Brooks's film *The Producers*, when he is introduced by Max Bialystock, Zero Mostel's character, to their chosen director, Roger De Bris: "Max...he's wearing a dress."

Nobody with any sense of self-preservation, however, would risk mocking O'Brien. At 73, he is smart and amusing, and though sympathetic, he isn't the kind to allow intolerance or idiocy to go unpunished. He has the sort of confidence that comes from someone who created one of the most successful musicals in history.

Some critics initially dismissed *The Rocky Horror Show*, first staged at London's Royal Court Theatre in 1973, as a kind of camp joke, but more than four decades later it continues to attract audiences of all ages across the globe. A revival of the kitsch musical begins a British tour on December 18, continuing through August 2016. The production sold out 11 London performances in September, with guest performers including Stephen Fry. But the tour is hardly a comeback for the rock musical; it has never gone away. For the past four decades, on any night of any year, *The Rocky Horror Show* has been on a stage somewhere in the world.

"We've conquered the whole of Europe," O'Brien says, in a tone of mock imperialism. "And Japan. And America, North and South. I'm not sure about Azerbaijan."

In its first American incarnation, the show that O'Brien calls *Rocky* survived a mauling from New York critic Rex Reed, who said the production was "only for homosexuals." It was a remark that "seriously offended my wife," O'Brien recalls, "and my boyfriend."

The show survived the critics and then some. The Rocky Horror Show has made O'Brien a wealthy man whose creation has entertained generations of theatergoers and glam-rock fans. The original London production ran for seven years, notching nearly 3,000 performances. In 1975, the musical's reach grew hugely when it was made into a movie, *The Rocky Horror Picture Show*, starring Tim Curry, Susan Sarandon, Meat Loaf and O'Brien (as a servant named Riff Raff). The movie is still in limited theatrical release, making it the longest-running cinematic release in history. Audience members often dress up in vampy drag and shout out most of the lines of dialogue.

O'Brien has engaged in other ventures with mixed success: in Britain, notably, as the host of a game show named *The Crystal Maze*, which ran in the early 1990s and tested contestants' mental and gymnastic agility. Other projects, among them the musical *Shock Treatment* the 1981 follow-up to *The Rocky Horror Show* were failures.

But Rocky has never lost its appeal, straddling cult status and mass appeal. How is it that a musical that seemed very much of its time managed to establish a degree of worldwide recognition to compare with that of *Macbeth*?

"Again and again," O'Brien says, "I've tried to work that out. I've never been able to. Rocky shouldn't be successful. It's childish. It's puerile beyond belief. The songs are so basic. Perhaps it's because it's a retelling of the fall of man. Brad and Janet [the naive lead couple, played by Barry Bostwick and Sarandon in the movie] are Adam and Eve. Frank N. Furter [Curry] is the serpent. I'd like somebody else to tell me what it's all about. Somebody with a bigger brain than mine. Maybe it's the hidden themes that make it last, like a fairy tale. It celebrates difference. People who feel marginalized, alone and confused; somehow, it gathers them together and allows them to coexist."

Entering a car on a night train, as I once did, to discover that every other passenger is returning from a Rocky Horror

Picture Show screening in costume as one of the characters, I tell O'Brien, is a frankly alarming experience.

"It is. But there's a joyous quality to it," he says. "You get girls who feel they are overweight and are ridiculed, goths, hippies. The show brings all of these alienated people together."

It's not a struggle for O'Brien to relate to this sense of being different. He has been married three times his current spouse, Sabrina Graf, 35 years his junior, is German and has three children. He was born in Cheltenham, England, where his father, Alex, was an accountant. When he was 10, the family moved to Tauranga, New Zealand: a nation, I suggest, not traditionally associated with flexible notions of gender.

"Oh, I loved it. It was a fantastic place to grow up. I left school at 15 and became a glazier. Then a hairdresser. But I was lost, I suppose. All of my dreams were in my head. And that's where I lived in my head."

He returned to England when he was 22 and began his acting career as a stunt double, riding horses in films, including the popular British comedy *Carry On Cowboy*. He appeared in the 1970 U.K. touring production of the musical *Hair* and wrote *The Rocky Horror Show* after playing a leper in *Jesus Christ Superstar*.

It was no accident that the jobbing actor's new musical explored the themes of gender identity. It took years, in O'Brien's words, for him to "accept the notion of transgender." The actor views himself as "70 percent male, 30 percent female." In practical terms, how did that affect his life?

"If I wanted to put a frock on, I would. I remember the first time I went to buy high heels. There are two shopgirls, getting sniggery. I say, 'Well, girls, I've already bought the frock, and it really is just fabulous.' They exchange looks. Then I say, 'These shoes aren't a bad color; they're

so damn close, it's annoying.' Before they know it, they're running around desperately searching for the right shade of scarlet. They have joined in. You've brought them on to the journey. And that," says O'Brien, who now lives back in New Zealand, close to the house where he grew up, "is wonderful."

When Rocky opened, pop culture figures like David Bowie and Mick Ronson were dabbling in androgyny. With Rocky, O'Brien wasn't dabbling. He was diving in, as he was with the rapidly liberalizing attitudes toward sex in the late 1960s and early '70s. It's a subject that still interests him. Recreational sex, O'Brien says, "is recreational sex. I see the person [not the gender]. If we walk away with a smile and think, That was delightful...where's the problem?" asks O'Brien with a look that indicates further exploration of this subject would be ill-advised.

I wonder if it bothers him that he is still identified as Mr. Rocky Horror? "No. I'm really glad Rocky has this life, but I don't think that it defines me. I am a freer agent than that."

I ask, "You once said, 'People stare at me in the street, and I'm not sure why.' Is that still true?"

Less than it was, he says.

"Though even today," I suggest, "it does take courage to be different."

He replies, "I know exactly what you mean. I've been in places where they'd take you out simply because they didn't like the cut of your jib."

But then, O'Brien adds, "What have I got to lose? Except for my life? And I'm going to lose that eventually, anyway. You know, over the years, with The Rocky Horror Show, I've had some hateful reviews. When I say 'hateful,' I mean vicious. Personally hateful. And where are these reviewers now?"

"I don't know," I say.

"Dead. They are all dead. All of them. Dead. They are all dead. And where am I? I am here. Alive. And so," O'Brien adds, "I win."



James Dimmock/FOX

AN ABRIDGED GLOSSARY TO SEASON 2 OF 'EMPIRE'

**CATCH UP ON FOX'S SHAKESPEAREAN HIP-HOP DRAMA
AS SEASON 2 APPROACHES.**

Shakespearean hip-hopera and Emmy Award-nominated family drama *Empire* returns Wednesday to Fox for its highly anticipated second season. *Empire*'s first season made history, both in ratings (the show's average weekly audience approached 15 million people) and in diversity

(seven of its eight leads are people of color). It was rightfully praised too for its fierce women leads and for its culturally transgressive references to contemporary issues, Black Lives Matter among them.

Set in present-day New York City, *Empire* explores the wheelings and dealings of the Lyon family, particularly Lucious (Terrence Howard), who founded and runs the notorious hip-hop label Empire Enterprises along with his ex-wife, Cookie (Taraji P. Henson). When we meet Cookie, she's just finished serving time in prison for possession of drugs with intent to distribute (the money she and Lucious used to get Empire off the ground). She comes back with a vengeance, right as Lucious is diagnosed with Lou Gehrig's disease (falsely, it turns out) and begins grooming one of his three sons to inherit the Empire throne when he's gone.

When we last left the Lyons' den, Lucious had just been imprisoned for killing his former best friend, Bunkie, and Cookie finally had a high-ranking position at the company she helped start. The oldest of their three sons, Andre (Trai Byers), and the youngest, rapper ingénue Hakeem (Bryshere Y. Gray), were helping their mom plot a hostile takeover against the R&B crooner middle kid, Jamal (Jussie Smollett), who had been given the kingdom by his father, despite their disagreements over Jamal's homosexuality.

And if you think that's some prime-time soap high drama, Lucious's former head of A&R and current fiancée, Anika Calhoun (Grace Gealey), had just been—surprise!—caught in bed with Hakeem, but it serves Lucious right: The Lyon patriarch had revealed that he was the father of the daughter that Jamal's former wife, Olivia (Raven-Symone), had recently brought to the Lyon mansion.

While the Empire family tree isn't as convoluted as, say, a Gabriel García Márquez novel, viewers who haven't rewatched the first season since it aired could be forgiven for failing to keep track of all the characters' alliances, enemies and backstabbing as they all lurch toward seizing the empire.

Robert Ham's new companion book, *Empire: The Unauthorized Untold Story*, is of some help. It breaks down the show with episode-by-episode analyses while comparing the fictitious record label empire to the empires of Genghis Khan, Julius Caesar and King Lear. Yet Ham says he was initially drawn to *Empire* upon hearing that Timbaland would be producing its musical numbers, some of which—like Smollet's "You're So Beautiful" and "I Wanna Love You"—have become hits in their own right (and landed him a recording contract with Columbia). "My interest in the show was mainly a musical one," Ham says.

Though he has yet to see the new episodes himself, Ham speculates that viewers can expect to see Jamal, *Empire*'s new CEO, in the hot seat this season. "It'll be one of the most interesting things in the second season to see if Jamal turns into his father," he says. "How conniving and evil he can get?" In the book, Ham makes the astute observation that Lucious and Jamal's freestyling together isn't so much a father and son reconciling their differences but a transference of power in a way. We'll see if this rings true.

Below, a condensed glossary to help refresh your memory (or introduce you to the world of *Empire*) before Season 2 gives you more than you can handle.

ALS (n): An abbreviation for amyotrophic lateral sclerosis, a neurodegenerative disease that causes nerve cells to degenerate and the brain to cease controlling muscle movement. Also known as Lou Gehrig's disease, Lucious is incorrectly diagnosed with ALS in Season 1, causing him to prime one of his sons to take over *Empire* after his death.

Anika (n): The former A&R head at *Empire Enterprises* and Lucious's onetime fiancée. Sneaky and calculating; it's unclear whose side she is on.

Becky (n): Lucious's former assistant who gets promoted to head of A&R upon Anika's unceremonious exit. Played by Gabourney Sidibe.

bipolar disorder (n): A mental disorder that eldest Lyon son Andre battles. What Cookie refers to as a “white person problem”; Lucious denies it exists altogether.

Billy Beretti (n.): The CEO of Creedmoor Records, Empire’s rival. Played by Judd Nelson, Beretti was Lucious’s former mentor and made him famous, but the two had a bitter falling-out.

Boo Boo Kitty (n): A term for someone who is just average. Cookie’s derogatory nickname for Anika.

Bunkie (n): Cookie’s cousin and a childhood friend of Lucious’s. When he attempts to extort \$3 million from Lucious for spying on Cookie in order to pay off his gambling debt, Lucious shoots and kills him.

“Bye, Felicia!” (sent., archaic): From the 1995 film Friday; a condescending way to signal someone’s exit. What Cookie says to Anika upon revealing to Lucious that she’s been meeting with their rival, Billy Beretti.

bougie (adj): A derivation of bourgeois, a term used to describe something or someone attempting to be ostentatiously upscale.

Camilla (n): Played by supermodel Naomi Campbell, Camilla is a distinguished British fashion designer who secretly dates Hakeem. When she begins to make decisions about his musical career, Lucious attempts to pay her off so she will disappear from Hakeem’s life, though she vows to come back. See: side piece.

Chicken (n): The androgynous and sole female member of Hakeem’s crew, and a formidable DJ in her own right. Played by AzMarie Livingston.

Cookie (n.): “The heart, soul and balls of Empire,” according to author Robert Ham. The matriarch of the Lyon family and a brilliant music producer. Often reminds the family how she made a sacrifice for them by going to prison.

’Dre (n.): A nickname for Andre Lyon, the oldest of the three sons. Frequently expresses his insecurity about being

the sole member of the Lyon family without musical talent, but is a genius at business matters.

drop (v): to release, in regards to an album. A common trend among contemporary rappers—notably Azealia Banks, Angel Haze, Kendrick Lamar and Drake, among others—is to drop an album ahead of release, often due to differences between the artists and their respective record labels.

fake-ass Halle Berry (adj., pejorative): A nickname that Cookie has for Anika.

Frank Gathers (n.): A drug kingpin and a former employer of Lucious and Cookie's who comes back into their lives. Played by too exciting a guest star to mention by name. Do some Google digging if you must know.

hairy dingleberry (n.): A piece of feces that remains clung to the hair of the respective body part that spurned it. How Lucious refers to his frenemy, Creedmoor Records CEO Jimmy Beretti.

ho (n., pejorative): A derogatory term for a prostitute, or a lady who enjoys sex. See: thot.

hot (adj): A slang term for “awesome,” frequently used by Hakeem, Jamal and Cookie, especially in relation to a song or a beat.

'Keem (n.): A nickname for Hakeem, the youngest Lyon son, who is a gifted rapper but bears the naïveté and braggadocio of, say, Justin Bieber.

King Lear (n.): William Shakespeare's tragedy and an oft-cited Empire influence that is referenced in the series' first episode. When Lucious begins to prepare one of his three sons to take over the company, Jamal asks: “What is this, King Lear?”

Lucious (n.): The cunning, cold-blooded patriarch of the Lyon family, and the founder and CEO of Empire Enterprises.

Lyon (n.): The family behind Empire Enterprises.

Porsha (n.): Cookie's straight-shooting, fast-talking assistant, and the one who typically alerts her to digital trends. Played by Ta'Rhonda Jones.

'Mal (n.): A nickname for Jamal, the middle son of the Lyon clan.

music, the (n.): The sweet sounds that Empire touts itself as championing, though the many power grabs suggest otherwise.

nookie (v): Slang term for having sex, as in "If you want Cookie's nookie, ditch the bitch."

Ray Rice (v): To beat unconscious. A reference to Baltimore Ravens player Ray Rice, who beat his then-fiancée (now wife) Janay Palmer and dragged her out of an Atlantic City casino elevator in 2014. When she's ejected from a board meeting, Cookie fires back at Lucious, asking if he's going to "Ray Rice" her.

Rhonda (n): Andre's conniving albeit supportive wife, a Lady Macbeth of sorts. Shunned by Lucious because she is white. Played by Kaitlin Doubleday.

rose (n.): A flower commonly associated with romantic intentions. The distinguishing brand of the drugs Cookie and Lucious used to sling in their past life in Philadelphia, which is what causes Cookie to freak out when she receives one on her doorstep (It was, in fact, from Lucious, as a surprise on their anniversary.)

side piece (n.): A romantic interest that is not one's main go-to person, often called upon after midnight on weekdays and after 2 in the morning on weekends. Hakeem and Tiana both have respective ones, much to Hakeem's distaste. See "Camilla."

snitch (v.): A tattletale, someone who rats another person out. What Cookie fears being labeled if she cooperates with

the FBI in testifying against Frank Gathers to a grand jury about a murder she witnessed him committing years before.

streets, the (n.): “Not for everybody. That’s why they made sidewalks,” according to Cookie.

take care of (v.): A euphemism for taking someone out, or killing him. What Cookie enlists an old friend to do when she receives a rose on her doorstep and believes she is being targeted by a drug kingpin from her past.

Tiana (n.): One of Empire’s most prolific artists and a pop superstar. Briefly dates Hakeem, but the two sever ties when he finds out she is also dating a woman. Played by Serayah McNeill.

thot (n.): An acronym for “that hoe over there.” A disparaging term for a woman who enjoys sex.

Valentina (n.): The leader of an all-Latina girl group that Hakeem is putting together. Played by Becky G.

Vernon (n.): A childhood friend of Lucious and Bunkie’s, now Lucious’s “yes” man and the guy who makes things disappear. Accidentally killed by Rhonda in the Season 1 finale, after a scuffle with Andre turned violent. Played by Malik Yoba.

viral (adj.): To gain Worldwide Web fame overnight, especially in the form of an Internet video. The only way to describe a video that Andre and Rhonda upload of Tiana and her girlfriend, India, unbeknownst to Hakeem, who is dating her at the time.

wack (adj.): Slang for something unsavory or unappealing and used to describe the songs that Lucious wants his sons to sing, according to his sons.



Maro Kouri/Polaris/Newscom

GREECE'S REAL-LIFE DRAMA IS BEING PLAYED OUT IN EUROPEAN THEATERS

**A SPATE OF GREEK TRAGEDY REVIVALS THAT SPEAK TO
THE CURRENT CRISIS.**

At the beginning of this year, Greek Prime Minister Alexis Tsipras compared the contemporary fate of cash-strapped Greece to Sophocles's tragedy *Antigone*, written in Athens over 2,400 years ago. In that play, *Antigone*

defies her uncle Creon's edict to leave her renegade brother Polyneices's corpse unburied; she says she is following divine justice, not arbitrary human law. Tsipras likened the blinkered imposition of fiscal rectitude by Greece's main creditors—the European Central Bank, the European Commission and the International Monetary Fund—to Creon's narrow legalism, and his ruling left-wing Syriza party's stand against austerity to Antigone's noble defiance: "Greece is the country of Sophocles," he declared, "who taught us with his Antigone that there are moments in which the supreme law is justice."

That things didn't turn out quite as Tsipras hoped—he essentially gave in to pressure from the creditors and agreed to a new round of budget cuts—should come as no surprise to aficionados of Greek tragedy, a form built on unhappy reversals of fortune. It is probably no coincidence that three productions of Aeschylus's great trilogy *The Oresteia* have been showing or are about to open in Britain, two in London and one in Manchester. A production of *Antigone*, starring French movie star Juliette Binoche, has just wrapped up a world tour. The Almeida Theater in London is in the middle of a "Greeks" season featuring two plays by Euripides.

A growing number of directors and theater managers appear to believe that these ancient plays have important things to say about our contemporary crises. The electrifying production of *The Oresteia* at Shakespeare's Globe in South London draws a straight line between ancient and modern by evoking the Athens of 2015 with graffiti-scrawled walls and sinister-looking riot police with black berets and short-handled truncheons.

"The plays certainly speak to the modern predicament and particularly in times of war and displacement and international horror," says Armand D'Angour, a tutor in classics at Oxford University. Adele Thomas, director of *The Oresteia*, agrees: "It's unavoidable that contemporary issues are there," says. "We live in dangerous times."

The backdrop of *The Oresteia* is the long, pointless Trojan War, which killed and maimed thousands. For much of the trilogy, there seems to be no end to the cycle in which bloodshed breeds more bloodshed; King Agamemnon sacrifices his daughter Iphigenia; his wife Clytemnestra murders him on his return from Troy; then their son Orestes returns to avenge his father's death by killing her and her lover.

Some of the lines in Rory Mullarkey's sparkling new translation strike contemporary chords, as Western countries continue to engage militarily in the Middle East: "We sent our boys; they came back in boxes." Mullarkey's line is a faithful translation that merely substitutes boxes for the Greek word for urns. In fact, Mullarkey says that he wanted to stay as close as possible to the original. "I wasn't trying to make contemporary references when they weren't there," he tells *Newsweek*.

The plays, when originally staged in Athens, as historian Paul Cartledge reminds us, were great public, civic events, "paid for in part by the city itself." The current spate of revivals shows that these ageless dramas, and drama in general, can be an essential forum for public debate, as democracy comes under increasing strain, not just in Greece but all over a confused and surly continent. The only fragile hope they hold out is that human beings may eventually "learn through suffering." Maybe Alexis Tsipras already knows that.

01

COLLATERAL VICTIM

Kabul, Afghanistan—Manuela Peredi treats 4-year-old Wahidullah on October 3 as his father, Najubullah, looks on. The child survived a U.S. airstrike on a Doctors Without Borders hospital in Kunduz earlier that day. The Pentagon, which has promised an investigation, said Afghan forces called in the airstrike after they came under fire from Taliban fighters either nearby or firing from the hospital itself. At least 22 people died and dozens more were wounded at the hospital run by the aid group, which said the attack was a war crime.



Victor J. Blue/The New York Times/Redux

02

LANDFALL

Lesbos island, Greece—Asylum seekers celebrate on October 1 as they reach Lesbos in an overloaded rubber dinghy on the coast near Skala Sikaminias. An estimated 100,000 refugees and migrants have arrived on the Greek islands in August, according to the Hellenic Coast Guard. Spurred by public anger over the humanitarian crisis, the European Union has turned its attention to helping Syrian refugees escaping a prolonged civil war. Germany has led the EU with its plans to take in nearly 800,000 asylum seekers, and a few other nations have changed immigration regulations for Syrians to streamline the process. But advocates fear that asylum seekers from Afghanistan, Pakistan, Iraq and parts of North Africa may be ignored.



03

AGAIN

Roseburg, Oregon—Students, staff and faculty evacuate Umpqua Community College on October 1 after a shooting left nine dead and nine injured. The shooter, Chris Harper-Mercer, who had at least 13 guns, committed suicide after a brief exchange of gunfire with police. The latest in a string of mass shootings prompted an angry President Barack Obama to call on U.S. citizens to stand up to the National Rifle Association and vote out legislators who stymie what he called “common-sense gun legislation.” Democratic presidential candidate Hillary Clinton said that, if elected, she might use executive authority to close gun law loopholes if Congress refused to pass legislation. When Republican Jeb Bush was asked about shootings and the need for tighter gun laws, he demurred, explaining that “stuff happens.”

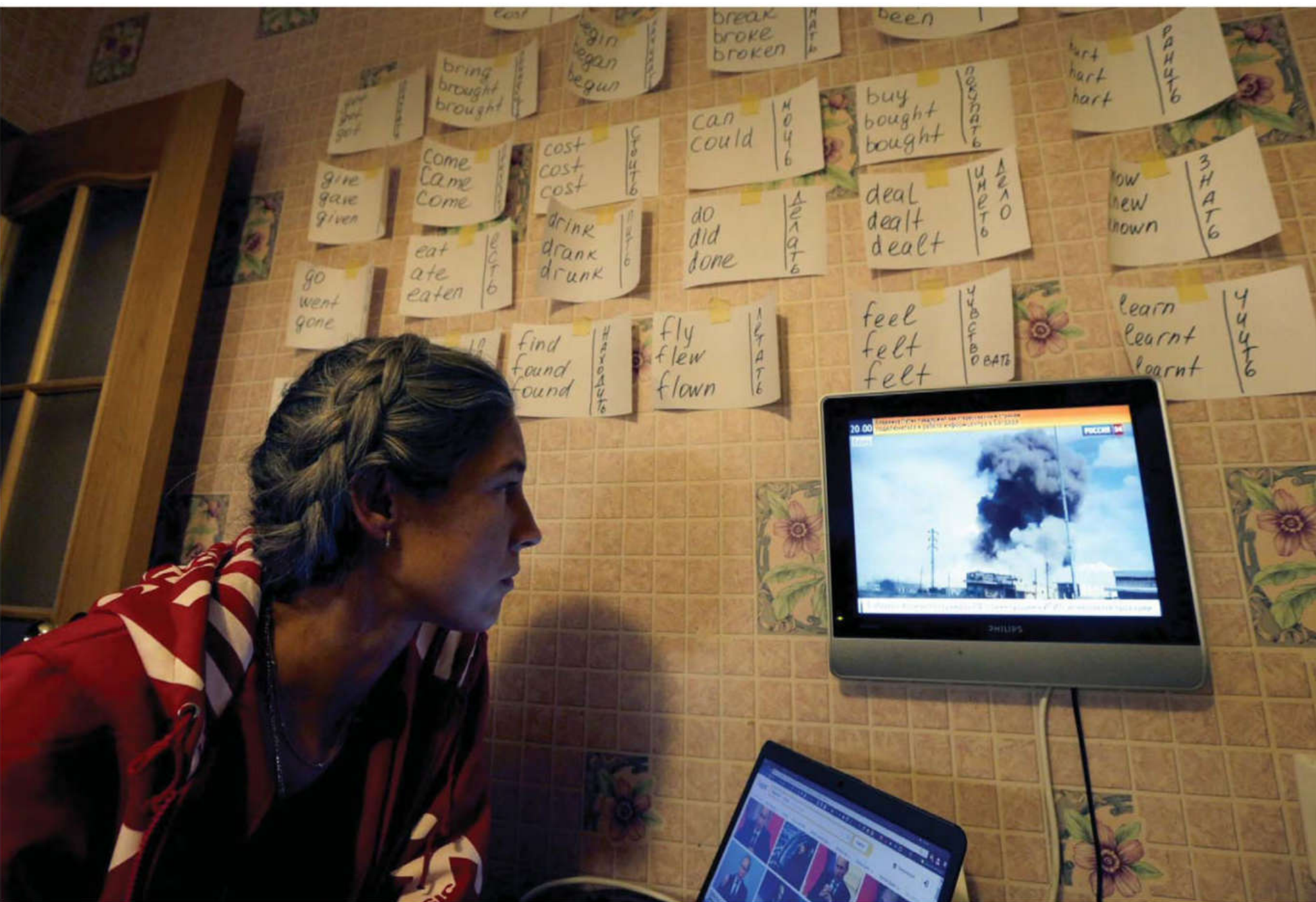


Michael Sullivan/The News-Review/AP

04

AFGHANISTAN REDUX?

St. Petersburg, Russia—A woman watches Russian airstrikes in Syria on a Russia-24 news program on September 30. Two days after President Vladimir Putin delivered a speech at the U.N., Russia began a series of airstrikes it said targeted ISIS facilities. Russia's parliament approved the use of force in Syria at the request of Syrian President Bashar al-Assad. The initial wave of airstrikes included locations in the western city of Homs held by anti-regime rebel forces, raising suspicions that Putin's move was more about propping up Assad than fighting terrorism. U.S. Secretary of Defense Ashton Carter warned that Russia was at risk of “pouring gasoline on the fire.”



Anatoly Maltsev/EPA